

**The Ramakrishna Mission
Institute of Culture Library**

Presented by

Dr. Baridbaran Mukerji

RMICL-8

6860

6860

EDUCATION AND PSYCHOLOGY

RECENTLY PUBLISHED.

A PRIMER OF TEACHING PRACTICE. By J. A. GREEN, M.A., Professor of Education in the University of Sheffield; and C. BIRCHENOUGH, M.A., Lecturer in Education in the University of Sheffield. With 2 Coloured Plates and 16 Figures in the Text. Crown 8vo, 2s. 6d. net.

THE MENTAL AND PHYSICAL LIFE OF SCHOOL CHILDREN. By PETER SANDIFORD, M.Sc. (Manchester), Ph.D. (Columbia), Professor of Education at the University, Toronto; formerly Lecturer on Education in the University of Manchester. With Tables and Diagrams. Crown 8vo, 4s. 6d.

THE PLACE OF PSYCHOLOGY IN THE TRAINING OF THE TEACHER. By ALEXANDER DARROCH, M.A., Professor of Education in the University of Edinburgh. Crown 8vo, 2s. net.

EDUCATION AND THE NEW UTILITARIANISM, AND OTHER EDUCATIONAL ADDRESSES. By ALEXANDER DARROCH, M.A. Crown 8vo.

INTRODUCTION TO EXPERIMENTAL EDUCATION. By ROBERT B. RUSK, M.A. (Glas.), B.A. (Cantab.), Ph.D. (Jena). Crown 8vo, 4s. 6d. net.

THE PRINCIPLES OF EDUCATION. By T. RAYMONT, M.A. Crown 8vo, 4s. 6d.

EDUCATIONAL AIMS AND CIVIC NEEDS. By JAMES H. BAKER, M.A., LL.D., President of the University of Colorado. Crown 8vo, 3s. 6d. net.

LONGMANS, GREEN & CO. LIMITED,
LONDON, NEW YORK, BOMBAY, AND CALCUTTA.

EDUCATION AND PSYCHOLOGY

BY
MICHAEL WEST, I.E.S.

LONGMANS, GREEN, AND CO.
39 PATERNOSTER ROW, LONDON
NEW YORK, BOMBAY, AND CALCUTTA

*1914

All rights reserved

RMIC LIBRARY	
Acc. No.	5860
Class No.	370.15
	WIK
Author	
Subject	
Editor	✓
Unit	2Ae
Base	

AUTHOR'S NOTE.

SOME explanation of the purpose of this book is needed.

The book is cast in the form of a text-book of educational psychology. A simple outline of psychology is given and applied at every point to the problem of schooling.

But it is primarily intended for a larger public than the school and the training college. It is therefore made free from unnecessary technical terms and discussions of subjects of purely professional interest.

The book is intended to point out the psychological error which lies at the basis of the present educational system, and its grave dangers. A remedy is suggested.

Dacca, Jan. 1, 1914.

CONTENTS

PART I.

CHAPTER	PAGE
I. THE MEANING OF EDUCATIONAL PSYCHOLOGY - -	1
II. THE SCOPE OF PSYCHOLOGY - - - -	13
III. THE METHODS OF PSYCHOLOGY - - - -	22
IV. THE NERVOUS SYSTEM - - - - -	34
V. FATIGUE - - - - -	45

PART II.

VI. ATTENTION - - - - -	56
VII. SENSATION AND PERCEPTION - - - -	74
VIII. MEMORY - - - - -	85
IX. INTELLECT - - - - -	107
X. THE TECHNICAL SUBJECTS - - - - -	129

PART III.

XI. IMAGINATION - - - - -	139
XII. THE LIBERAL SUBJECTS - - - - -	151

<i>PART IV.</i>		
CHAPTER		PAGE
XIII. FEELING	- - - - -	182
XIV. <u>INSTINCT</u>	- - - - -	192
XV. THE ADAPTIVE AND SOCIAL INSTINCTS	- - -	217
XVI. LANGUAGE AND THE INSTINCT OF SELF-EXPRESSION		231
XVII. THE SELF	- - - - -	247

<i>PART V.</i>		
XVIII. EDUCATION FOR ACTION	- - - - -	262
XIX. IDEAL CONSTRUCTION—THE BOY	- - - - -	288
XX. THE SCHOOLMASTER	- - - - -	307
XXI. THE SCHOOL	- - - - -	317
XXII. THE ALTERNATIVE	- - - - -	337

PART I.

CHAPTER I.

THE MEANING OF EDUCATIONAL PSYCHOLOGY.

What is Psychology? It would not be untrue to say that if one knows the meaning of a science one is half-way towards knowing the science itself. Only an accomplished chemist can tell one the precise meaning of the word "Chemistry." This saying holds especially true in the case of Psychology. Most of the errors in the history of the science, and nearly all the errors made by the student approaching the subject for the first time are due to a misunderstanding of **WHAT PSYCHOLOGY IS.**

We may start as usual by splitting the term into two Greek words *psyche* and *logos*. *Psyche* is ordinarily translated as "soul" and *logos* as "science." Let us examine each of these words separately.

Psyche. Psychology to the Greeks was a section of Philosophy. Philosophy deals with three great subjects.

1. The real nature of the world.
2. The real nature of God.
3. The real nature of man's soul,

The first section would include of modern sciences Chemistry, Physics, Astronomy. But as the Greeks tried to discover not only the real nature, but also the origin and final end of the world, and as they did this largely by speculations and arguments, the section would also include a great deal of Philosophy in its modern narrower meaning.

The second section would include Theology and Philosophy again.

The third section includes arguments on

- (a) The origin of man's soul.
- (b) The destiny of man's soul.
- (c) The nature of man's soul.

It is clear that the Greeks here included under the word "soul" a great deal more than we should include. Perhaps we might define the ordinary meaning of soul as "the motive force of our minds and bodies." The Greeks included also besides the motive force, the work which the motive force produces, namely Thought.

Thus PSYCHE means two things :

- 1. The force of Life.
- 2. The manifestation of Life, namely Thought.

The Modern Meaning of "Psyche." Just as Philosophy has been separated into many different sciences, so the one section of it, Psychology, has been divided in modern times.

The origin and nature and destiny of man's soul is left to Philosophy and Theology. Psychology confines itself to the study not of the soul itself but only of its work, and not even the whole of its work in body and mind, but only of mind.

The scope of Psychology is, then, the study of Life as manifested in mental activity.

Psychic Research. It is very important to keep in mind this limitation of the subject. Often Psychology is taken to mean the modern counterpart of witchcraft. It is made to include ghost-hunting, table-turning, thought-reading, and all sorts of illicit dabbings with the other world. All that Psychology has to do with such practices is to study the minds of the people who indulge in them. Thus a psychologist may try to account for the mental state of a table-turner, just as he might try to account for the mental state of a poet, or a drunkard, or a homicidal maniac, but with the "soul," the something which survives after death, he is nothing or very little concerned.

The Scope of Psychology. We said above that its scope was "Life as manifested in mental activity." As a broad definition this will serve. But, unfortunately, the danger of it is that it is apt to be made a very great deal too narrow. For people are apt to believe that "mental activity" means such Thought only as one uses in working out a proposition of Euclid, or in sitting in an armchair in abstracted reverie. In fact, there is somewhat of a tendency to believe that "mental activity" means pure thought, abstract thought divided from action. This is a very serious fallacy. We are thinking just as much when we mend a bicycle tyre, or hit an enemy in the eye, or make a wooden bookcase, as when wrapped in a brown study. In fact, it would be true to say that we are *thinking* a great deal more in the mending of the tyre or the hitting of the enemy. It has been implied that Life is the fundamental thing, and mental activity only one branch or aspect of it. The fundamental thing of Life is what we do. We think only in order to do. All sciences, as we shall see later, bear on this one subject, "What to do." Psychology is one of those which bears on it most directly. In Psychology we consider "Doing" from the mental aspect—from the aspect of the mental activity which lies behind it.

Before discussing this point at greater length we will go on to consider the word "Logos."

The First Stage of Science. Auguste Comte said that there are three stages of human scientific thought. The first is the stage of Empiricism. In this stage man does not understand; he merely makes haphazard guesses. For example, the other day I saw in the bazaar in Calcutta the sign "Elixir of Life." The seller of that elixir does not know what life is: he comes across some drug, and he thinks it may do good often from some purely fanciful reason (*e.g.* because the leaf of the plant is shaped like the part affected by the disease) and he tries it. Empiricism means "trying."

In this stage Psychology is a form of magic : a man will wear a charm so as to improve his memory : he will mutter incantations to cure madness : he will burn herbs so that his child may grow up good and clever. In fact, the mind is looked upon as some strange demi-god sitting somewhere inside us to whom we give medicine and offer sacrifices.

The Second Stage of Science. The second stage is said by Comte to be the stage of Naming. It is a stage of classification and Logic. In the first stage man personified the flowers in many beautiful legends : here he calls them by long Latin names. So here, in Psychology, man classifies and gives long names to the acts of the mind. Thought consists in Volitions, Emotions, Sensations, etc. In the same way we might say "Electricity is Illumination, Motion, Stimulation." But this does not tell us what Electricity is—nor thought. The best criticism of this method is where the doctor in *Le Medicin malgré lui* says that opium sends one to sleep because of its "soporific action."

Logos has two meanings, "word" and "reason." It would not be wholly fanciful to say that "logy" in "Psychology" is a relic of the *Word-stage* of science, when things were named instead of explained, and the scientist hid his ignorance under a dictionary. Certainly Psychology has taken longer in passing through this stage than any other science. Education still suffers from this "Word-Psychology."

The old psychologists named and classified the acts of the mind, just as one might say (as above) that Electricity is

1. Illumination.
2. Motion.
3. Stimulation (or Shock).

From this it was a very easy step to suppose that there existed in the mind different departments corresponding to the various products of the mind, a Memory department, an Imagination department, and so on.

It is as if I were to suppose in a Dynamo an Illumination department, a Motion department, and a Stimulation department.

This would not have had any evil effect on Education if it had not been for other circumstances. If I have a son, and I know more or less what he is capable of, and what work he will do in after-life, I shall simply prepare him for his after-life whatever my views on Psychology. Good Psychology will help me to know him better and to prepare him better, and bad Psychology will make me prepare him worse, but it will not stop me from preparing him. In the Middle Ages, without any Psychology, a clever boy of the upper classes was taught Latin and Greek to prepare him for life as a cleric or as one of the lay governing classes. All the best literature and science was written in these languages. They were as indispensable to an up-to-date man of culture as German is nowadays—even more so. Moreover, just as now no one can pretend to any social status without some knowledge of French speech, so then Latin was the social passport of the upper classes.

It is clear, therefore, that a boy received a very practical education in the Middle Ages. He learned two languages which enabled him to read all the latest and best science and literature necessary for his profession (of cleric or governor), and which also supplied him with a medium for "Polite" and "Diplomatic" conversation. It was the only education given in those days, simply because no one but these upper governing classes was educated. If there had been an education for the lower classes no doubt it would have been very different. Indeed, there was a lower-class education, for every father taught his son his own trade, or else put him as an apprentice to some very accomplished worker in the business for which he was better fitted.

Gradually Latin and Greek lost their place as the medium of the latest and best literature and science. At the same time, the work of the upper classes became

far more diversified. Instead of all leading very nearly the same life and needing the same preparation, they began to lead very different lives, some as politicians, some as country squires, some in the army, some in the navy, some later on in business. At the same time, also, education spread very considerably, so that children of very different grades and of very different future work in life began to receive school-training.

But the education did not change. For so long there had been the only school education because only one education was needed, that no one thought there could be any other education.

Yet some excuse was needed for teaching Latin and Greek to the child of business parents who was absolutely certain to go into business as soon as he left school, and would never have more use for these languages than he would have for Sanskrit or Chinese.

Just at the beginning of the nineteenth century the absurdity was becoming apparent. There had been great developments in science. These developments had revolutionised methods of manufacture. The trade of the country was increasing by leaps, and more and more men, especially of the higher and middle classes, were engaging in business. But the children were still being educated to be mediaeval politicians.

The end of the previous century had been great in Philosophy. As a result of that, and also as part of the great scientific movement, Psychology came very much to the fore. But it was a naming, a "word-Psychology." As a part of this scientific movement, the human body and brain were much studied. Out of a dangerous "little knowledge" came Phrenology : the purely logical classification of the acts of the mind was not only made into imaginary "Departments," but these departments were actually identified with bumps in the head !

And there was this preposterous education to be justified. It could not be justified as a training for,

life. It was, therefore, justified as a *training of the mind*. "I know that Latin is of very little use for life, and I know that Latin grammar is of very little use for learning to speak or write or read Latin. But we teach it because it *Trains the Faculty of Reason*"—the Bump, the Department of the brain.

That has been the end of the Logos stage of Psychology. We must be sure that the error is fully appreciated. The mind reasons. It may reason about Arithmetic or Science, or about Literature, or about Business, and—of business—about Cotton business or about the management of a shop. These are all different acts of the mind, just as different as Imagination and Reasoning. They are merely grouped together all as "Reasoning" by popular speech. But the only way to learn Cotton business reasoning is to reason about Cotton business. There is no general Faculty.

In any case, why do one thing so as to learn something else? Why dance on your left leg so as to train your right?

It follows that we, who do not believe in Faculties, are going to teach the child just what he will do in life. Not merely his business, though we teach him that. But he will have to be more than a business-man. He will be a citizen of a town, and of a country; he will be a father. He will have leisure time; he must be taught to use it. He will form ideals; he will try to know himself. He must be taught to be all these things. He will be taught directly just as a student is taught to teach by learning to teach, or to dance by learning to dance, not by splitting up the power of dancing into Faculties, the faculty of turning, which is taught by drawing circles on a bit of paper, the faculty of going straight, which is taught by learning geometry.

It is said that the Faculty Theory is dead. But it is not dead. Else why are forty children in a primary school class all learning precisely the same thing every day? They are not all going to lead the same lives

afterwards. Some are shopkeepers' sons, some are the sons of labourers, some of skilled mechanics. All will go into different grades, some into one, some into another. Yet if the faculty theory is dead, why is the boy who is going to be a chauffeur receiving the same training as the boy who will be a clerk. Unless it is assumed that the same Faculty of Reasoning is used in both. In that case, a good chauffeur would be a good clerk, and, in fact, a good anything.

Or again why is the boy, who in after-life will spend his spare time in music and there form his ideals, receiving the same training as a boy whose spare-time expression is art, and as another boy who is literary. We are training a Faculty of Aestheticism by giving all the same training.

Every boy must be prepared directly for all he will have to do and be in life. We are considering Psychology so as to find out from the child's own mind how best this can be accomplished.

The Third Stage of Science. In the third and last stage of science, according to Comte, man seeks for Causes. Instead of naming opium a soporific drug he enquires *why* it has its soporific effects. So, instead of naming the acts of the mind, Memory, etc., Science enquires *why* the mind remembers, thinks, and imagines—the cause.

Here we cannot altogether agree with Comte, for he says that the true and only aim of science is to discover causes. What is meant by a science? A body of accurate information, as contrasted with common observation: an organised explanation, as contrasted with common ideas: *a body of organised accurate knowledge for the purpose of correct and efficient action, as contrasted with empirical practice.* The last is most accurate.

How does science arise? Out of desire to know. Why do we desire to know?

Suppose you saw suddenly in the street a bright blue horse you would feel curiosity, or desire to know.

Curiosity is closely allied to fear. Analysed more carefully the feeling is, "I know all other things in the street, and therefore take no notice; this I am unacquainted with." It is a vacuum, a hole in your experience. Why does the new thing, the unaccustomed thing arouse you? It is like a danger in the dark. All the other things you know how to deal with; you have met ordinary horses many a time and know from their nature how to treat them: you want knowledge because *you do not know how to act towards this horse*.

Man's one desire is to know what to do. He learns about things so as to know what they will do if he does so and so to them, *i.e.* he wants to know what to do to them so as to be able to go on doing, *viz.* to go on living himself.

Science, then, does not arise from a desire to seek a cause. The cause is only interesting because it shows us the real thing or person who is at the root of the thing. What is thunder? How am I to deal with it? run away; or hide? hide where? What is the thing that really matters? Not the noise, that is only a result, a servant. Who is the master, the real thing? Electricity. I have had dealings with Electricity. I know what to do. I am satisfied.

The characteristic of modern science is, then, that it answers the question, "What to do?" Logos-Science did not do this: it merely asked the question in another way.

It is clear that all science fundamentally is applied science. The scientist asks, "What shall I do with this phenomenon as a scientist?" The practical man asks, "What shall I do with this phenomenon as a practical man?"

So the teacher asks, "What shall I do with the Mind as a teacher?" Thus there is no such thing as knowledge for itself. Electricity came for the needs of navigation; Chemistry for the needs of health.

The meaning of this fact for us is twofold.

1. We must not teach the children science or knowledge as a thing in itself, but as applied. We must teach them how to act, and knowledge only in order to act, if we are to follow the natural path of the human mind. For they want to *do*, not to know.

2. We must not ourselves, in this particular instance, study mere Psychology, we must study how, as teachers, we are to act with regard to the child's mind. Say to yourself all the time as you read, "How does this bear on my work? What does this teach me to do?"

The Place of Psychology in the Sciences. Science has been defined as an organised body of accurate knowledge for the purpose of action. The sum total of all science teaches us what to do with everything so that we may live.

Science is divided into various sections: Chemistry, Physics, Physiology, etc. These divisions are not divisions of things in the world, *e.g.*

Chemistry	-	-	-	Matter.
Physics	-	-	-	Force.
Physiology	-	-	-	The body.
Psychology	-	-	-	The mind.

For such divisions would obviously be cross-divisions. The nerves, for example, might occur in Physiology, Psychology, Chemistry, or Physics. The sciences are different aspects of the whole of nature, *i.e.* of all the things with which we have to deal.

Nature may be divided into two great parts:

1. Life.
2. Energy.

In Sociology we deal with the structure of life, in Biology with the development of life. In Chemistry we deal with the structure of energy, in Physics with the progress or development of energy.

Psychology falls rather into the first group—Life. Sociology considers the structure of life from the outside. It considers a society in the same way as we might consider the structure of a bee-hive or an ant-hill. That is, it considers it objectively,—as an object from

the outside. So with Biology, Physiology, Chemistry. They consider things from outside. But Psychology considers the ant-hill from the point of view of the ants. It considers the world from the point of view of its effect upon man. It considers education from the point of view of the child.

How Psychology bears on Education. Let us compare Physiology. The aim there is physical fitness. Physiology shows

(1) In what physical fitness consists, *i.e.* exactly what the aim really is.

(2) How to attain that aim—the means.

So here there are two problems :

(1) What is the aim of education ?

(2) How to attain that aim.

Psychology answers both of these questions. In answer to the first it tells how to study what the particular child is, what powers he has in embryo, and, therefore, what he is capable of becoming.

And it says secondly how, by following laws which apply to all human minds, those embryo powers may be developed.

Yet the answer of Psychology is not complete. Education does not consist only in the development of the child's latent powers along their natural lines. This was the idea of Rousseau, that the educator should make the child become all that he has it in him to become.

This is the view of some of those nowadays who teach "Education as development."

Before the time of Rousseau Education was considered as Teaching, *i.e.* as remoulding the child into something other than he is by nature. It was believed that the child is by nature wholly bad, a child of the devil. It was believed that the function of Education was to check every wish and natural tendency of the child, for all are wholly bad.

The first view, that of Education as development, seems at first glance nearer the truth. But in reality

it is just as far off as the second. For the second has some truth in it. When it is said that a child is born a "son of the devil," it is meant that he is born morally bad. Morality is a matter of one's relation to society. It is perfectly true that the child is certainly not born a social being. Many of his tendencies are distinctly individualistic. Only certain weaknesses of his mind, certain qualities which are the result of the incomplete development of his mind make him capable of being formed into a fully social being.

Both sides are really true. We must not stunt the child: on the contrary we must develop him as fully as possible. But the child was born a member of society; the education which we give him is provided by society; therefore he must be developed here and stunted there so as to conform to the shape of society.

To a very large extent natural development and social usefulness coincide. On the other hand, society is not wholly "natural." The very fact that we feel morality as a bond shows that it involves sacrifices and self-restraint.

We must, therefore, strike a mean between what Psychology tells us the child can be, and what Sociology and Ethics tell us Society wants the child to be.

So we ask Psychology, "In view of the nature of the individual child's mind, how shall we develop and restrain it into the adult social mind?"

Education consists in supplying stimuli of action, withholding stimuli of action, and supplying stimuli (*e.g.* of pain), which will prevent action.

Psychology tells us what stimuli, positive and negative, to give or withhold in order ultimately to produce the adult social individual.

CHAPTER II.

THE SCOPE OF PSYCHOLOGY.

The Problems of Psychology. There are in Psychology four great problems—what is Thought, whence is Thought, how, and why? Each of these questions is answered by one of the great divisions of the subject. “What” is answered by Analytic Psychology, which tells the nature and components of mental life; “whence” is answered by Genetic Psychology, which informs us of the development of the mind from our infancy onwards; Physiological Psychology tells How, explaining the material basis of thought in brain and nerves; Dynamic Psychology tells why, giving the laws of the movement of thought, and showing for what reason one state of the mind follows another.

1. **Analytic Psychology.** Analytic Psychology, answering the question, “What?” is a necessary basis. It does not really supply an explanation. It is a mere classification of the acts of the mind: the more one thinks over this classification the more unreal does it seem to be. Thought and Will are part of the same great process: to separate them into two different things is like separating going to the town and getting there. Still, just as for the purposes of argument or description we might separate Going and Arriving, so for the sake of systematic treatment we may adopt the divisions of Analytic Psychology, remembering always that they are not real divisions, and do not correspond to any divisions in the mind or brain such as faculties.

2. Genetic Psychology. This is the most important branch of Psychology for the teacher. His duty is to guide the development of the child. Therefore he must learn what is the normal course of the child's growth. If I wish to train a rose to grow in spirals, it is highly necessary for me to know as a starting point how the rose would grow if it were left alone, viz. the laws of the rose's growth. But a teacher does not want a child to grow in "spirals." He wants him to follow as closely as possible his own natural line of development, with only just such modifications as society demands from all alike.

Hence in everything we do at school we should ask, "Is this suited to the child's present stage of development?" Sometimes we are apt to give the child's mind when it is, as it were, only two or three inches high, something which would suit it only when it is several feet high. So, to give a boy of eight years Euclid is equivalent to feeding a baby on mince pies and champagne. On the other hand, to give a boy of eighteen Fairy Tales is to feed him on Benger's food.

This, however, is not so common a mistake as the Error of Anticipation. Something given out of its time is usually nothing worse than waste of time. The boy of eight does not understand the Euclid, and there is no harm done: there has been no effect at all. And the boy of eighteen takes no notice of the Fairy Tales. The real danger of neglect of genetic psychology lies in knocking nails into the wall long before the plant gets there, in setting down Euclid when the boy is eight years old as something not to be done now but to be done later on. Undoubtedly, social needs determine to a certain extent which way the child has got to grow, but beyond that we cannot tell which way he will grow. The schoolmaster's duty is at each moment to help the boy to grow fully and completely along a course very little of which can be seen ahead.

If it were known exactly how each boy is going to grow there would be very little need of skilled education. Just because each boy is a separate problem, a man in embryo different from every other man, for whom one single definite work is waiting, which he alone can fulfil, just for that reason expert educationists are needed, skilled in knowing the mind of the child, so that from day to day they may watch the signs of the future.

Indeed, the greatest danger of Anticipation arises from Genetic Psychology itself. We are apt to evolve an imaginary child's path of development, and to drive all other children like sheep along it. First through the Plain of Infancy, then through the little Farmhouse of the Age of Stability, then through the Slough of Adolescence, thus shalt thou go, and at certain fixed points along the route meet the Giants and Angels of various Instincts. Great landmarks these are undoubtedly, the physical landmark of Adolescence, for example. So, too, there is the landmark of old age. Yet we adults would not like it if a definite course were mapped out for us, *e.g.*

Age forty	-	The age of Conservatism.
Age fifty	-	The age of Stability or Bigotry.
Age sixty	-	The period of Decline.
Age seventy	-	The age of Selfishness.
Age eighty	-	The age of Dotage.

Some things have got to come: but a scheme like this is merely a point of departure, a norm from which every boy departs more or less. The value of this norm is in the help it gives to the schoolmaster in knowing what to look for in each different individual child.

3. Physiological Psychology. Physiological Psychology attempts to explain the How of Thought; how thought works. It does this by explaining how the brain works, and the mechanism of the nervous system. In Physiological Psychology, of course, many reservations are made, and at the outset it is made quite clear

that no statement can be made as to how far an explanation of the brain is an explanation of thought, or what is the real connection between brain and mind. This is very much a matter of individual opinion, and is closely bound up with one's religious and philosophic attitude. Though it might be doubted if any one would say that the brain alone without anything else at all is a complete explanation.

On the other hand, those who hold very much to the existence of some cause higher than the brain are very apt to underestimate the value of Physiological Psychology. For two reasons the subject deserves especial attention.

First, whether there is such a thing as Pure Mind, no one is able to say. But this is certain that if there is Mind, its chief and only concern here and now is the living of life on this planet. We live in the body, and the regulative organ of the body is the brain and nervous system. By studying them we shall certainly learn a great deal about the means whereby our conduct is regulated, even if we do not learn anything about who regulates it. And as Psychology is concerned not with Psyche itself, but with one branch of what Psyche or Life does, this after all is the very thing we are trying to learn about. It is, therefore, very valuable to keep the physiological side perpetually before one, if only for this reason, that it keeps one to the point, the study of conduct, the study of the world from the mental aspect, so as to live our lives better and to help others to do so. It prevents one running off into all sorts of very interesting but quite irrelevant discussions of "Planes" and "higher life," and so on, by reminding us that it is this good life here and now that we are talking about.

Second, Physiological Psychology will often be found very useful as a more or less symbolical explanation. Not too much is known about the brain: much of what is known is really guess work. But there is reason to suppose that it is good guess work, and very

often it can supply if not a proved, at any rate a working explanation which gives us something concrete to go on. It is a characteristic of man's mind that it is always more at home with matter, it thinks best about things which can be touched, seen, cut, and drawn out in diagrams. Physiological Psychology helps such thought. At the same time it shows us very clearly the limitations, what we cannot touch and see and cut, and makes us very careful when we go beyond.

4. Dynamic Psychology. In every science we wish to know what is the subject-matter, and whence it is. But above all we wish to know what are the laws of its working, so that we may know how to deal with it. "If I do this to it, what will happen?" is the central question of every science. It is the question, "What to do?" in a limited form. So the only real reason why we want to know how such and such a flower evolved is that we may know what it really is now, and how to treat it. So, too, we want to know the man's character, and his history only for the sake of that. If we know his character, we know how to treat him, what to do.

Dynamic Psychology attempts to tell the laws of the mind's action. That is a very large order. It will be necessary to discuss later how far it is possible to do this.

SUB-DIVISIONS OF PSYCHOLOGY.

Individual Psychology. Besides these four great divisions of the aspects from which Psychology may be approached, there are certain divisions which are rather of the subject-matter which may be treated.

The first section is Individual Psychology as opposed to Collective Psychology, the study of groups of minds. General Individual Psychology treats the normal adult, by this the teacher knows what he is aiming at. Special Individual Psychology treats of the mind of a single individual person as a study in itself.

From this the teacher learns his special material. Differential Individual Psychology shows what differences between individuals are caused by sex or race. Most psychological statements are made vaguely about The Man, The Child. This shows what difference it makes if the child is a girl instead of a boy, and French instead of English, etc. Lastly, we have Individual Animal Psychology, or the study of individual animals (the Psychology of a single pet dog or bird, not dogs or birds as a class). By this means the first chapters in Genetic Psychology may be filled in, since man's mind evolved from an animal mind. Human infancy and animal psychology are allied studies. Secondly, an animal's brain is so much simpler in construction and for various reasons easier to experiment on, that animal Psychology supplies many useful facts in Physiological Psychology.

Collective Psychology. In Social or Collective Psychology the laws of consciousness of a society or a group of minds acting as one are studied. Thus one might study the conduct of a school, or of a class of boys. There are laws of crowd-feeling; from this we may know that if a teacher does a certain thing to a class of boys, the class will act in a certain way. There are, for example, laws of the spread of mob feeling, of fads, of the influence of prestige on a group, laws of group discipline, suggestion and imitation. Thus here we study the school society as a unit.

In Collective Ethnic Psychology, races and nations are studied as individuals. Just as one might study the character of Jones or Mukerjee, so one studies the French or the Afghans, or the Mongolian race.

In the same way social grades may be studied in Collective Class Psychology. Thus the study of the mind of the wealthy classes, of the nobility, of the working classes, may throw much light on social problems.

Abnormal Psychology. An ordinary rose-bud is about $1\frac{1}{4}$ inches high, $\frac{3}{4}$ inch thick. But some we may

suppose 3 inches high and $1\frac{1}{2}$ inches thick : these are super-normal, *i.e.* above ordinary. Others are only $\frac{1}{2}$ inch high and $\frac{1}{4}$ inch thick ; these are sub-normal or under ordinary. But suppose a bud is 3 inches high and $\frac{1}{4}$ inch thick, or $\frac{1}{2}$ inch high and 3 inches thick, it is abnormal or extraordinary. So, too, if its petals are blue instead of pink, or its stalk shaped in a spiral. If the rose lacks a stalk altogether, or has no thorns, or no petals, then it is Deficient.

So with people's minds ; some minds are all-round better, some are all-round inferior : some are better in one thing only, or odd in one thing only ; some actually lack a certain power altogether.

The study of such minds is a most important work. It is important in itself since the number of deficient and insane children is very large and unhappily is increasing. It is important also because the study of exceptional cases throws a great deal of light on the normal mind. Many of the greatest discoveries of Psychology have been derived from the study of the insane and unusual.

Lastly, it is important for this reason :—Abnormality does not necessarily mean insanity ; it means only something out of the ordinary. An ordinary man is a purely imaginary being. He is an exact-fifty-percent-in-everything man ; nowhere is he either very good or very bad. Such a description would hardly apply exactly to one man in a thousand. But it would apply fairly accurately to a *very* large number. Ordinary people are very common—the more extraordinary a person is the less common he is.

If men lived separately as savages, each doing everything for himself, undoubtedly the ordinary man would have the advantage. But the principle on which Society is built is the division of labour. One man is extraordinarily good at building, but subnormal or only normal at growing corn and food. One is supernormal in growing corn and subnormal in building houses. Both need houses, and both need food. So

the super-normal builder makes houses for both, and the super-normal farmer makes food for both. Thus Society is based on the idea of taking advantage of everyone's little super-normalities.

One hears a great deal about "all-round development" and "a good all-round education." It used to be "all-round cultivation of the faculties," but the word "faculty" has become so unpopular now that people have dropped the term while retaining the fallacy.

If one thinks of development in the vague, what is more natural than to say it should be "all round." But immediately this idea of Developing is dropped and the idea of Preparation considered, the error of "all round" is at once obvious. Even if all people were born so much alike that an "all round" development were possible, it would obviously pay to set about and make them as different as possible. For Society is composed of many different trades and professions, each with many different branches. Each of these trades and professions, and branches of trades and professions, has arisen because some one has a super-normality. It is those super-normalities that we wish to find and cultivate.

For this reason it was said that the norm of Genetic Psychology is only a point of departure. The school-master wishes to know what is the ordinary development of the ordinary child, just so as to see in what way this particular child departs from it, what are his supernormalities.

For the same reason a student should look with very considerable suspicion on any specialising in weak subjects and leaving strong subjects. Many teachers tend to say of a boy, "Oh, he is good enough in Arithmetic, his weak spot is his English. Leave the arithmetic and work at the English." This is just what the boy's after-life will *not* want. After-life wants a boy who is really good at arithmetic; "good enough" is no use at all. What about the weak spot? "Good

enough " English is just as useless as "good enough" arithmetic. If we consider the boy's future clearly, what he needs is English just sufficiently good not to hamper him in his proper line of work.

This is certainly not the idea of the schoolmaster in the "all-round education." His idea is not "*just* enough" all round but "*good* enough," i.e. normal, average all round. Whereas life demands very good in one thing and "*just* enough" in everything else.

What has been the cause of this working up the weak spot? Partly, no doubt, it is a relic of "all-round development of the faculties." But largely it is the result of examinations. Long ago schoolmasters found out that it does not pay to be too good at a subject. The boy who fails in examinations is not the all-round dolt, but the boy who excels in one subject, and is so fascinated by it that in some other subject he fails to pass. The pass standard is always a long way above Life's "*just* enough." Even if the boy passes, the classes are given on the average of the papers; gammas ("bads") cancel out alphas ("goods"), whereas in life an alpha is an alpha, and some one else can do the gamma subject—some one in whom that subject is an alpha.

It is not the fault of the much-abused examination itself. The fault lies in the use made of examination in putting a premium on the normal as if men were cattle, all to be bred up to the same standard of good beef.

The special study of the schoolmaster is, then, each single boy's super-normality. "Where is the boy specially good? What use can be made of that special power?"

CHAPTER III.

THE METHODS OF PSYCHOLOGY.

By what means are the results of Psychological study obtained ? Which of these means are best suited to the teacher ?

The means may be divided into two groups : first, study of oneself, by introspection and by retrospection ; second, study of others, uncontrolled in ordinary observation and in child-study, and scientifically controlled in physiological and psychological experiment.

DIRECT.

Introspection. By introspection is meant looking into one's own mind. For example, I am talking to some one and I look into my own mind to discover what are my feelings towards him. What I am really looking at is not my feelings at the moment, but the memory of what has just passed. This memory is quite near enough to the actual thing : only one's first impression is always most trustworthy in introspection, for the longer one looks the more distant the memory becomes, and hence the more liable to be falsified.

Introspection has this advantage, that it deals direct with mind itself. When we study other people's minds we have to rely upon facial expressions, or various acts, or speech, all of which are only symbols of what they think and feel. We interpret these symbols in the

light of our own self-knowledge. The interpretation is very apt to be wrong, for the symbols are vague, and in giving them meaning we assume that Our Selves are the same as Their Selves, which is not the case. Moreover, it is probable that they have not practised accurate outward expression of their mental states, and hence the symbols themselves are apt to be wrong at the very start.

In introspection we deal with mind direct, not through the medium of symbols. But when we come to apply the results of our own mental study to other people, we are in no better position than if we had studied other people's minds instead of our own. For in applying the results of the study of my mind to yours, I again make the assumption that "I" equals "You." Thus a schoolmaster studies a subject and looks into his own mind as he does so in order to find out the psychology of his work. He then proceeds to apply that psychology to teaching the subject to children: "Because I found such and such the best and quickest method, therefore that will be the best and quickest method for the class." For example, he found it of advantage to invent little jokes on the foreign words so as to remember them, and therefore does this for the class.

He forgets that he is a man and they are children. The minds are different: he is a thinker, and his memory for mere words is not as good as it was: the children's weakest point is the power of thought and of invention; they excel in memory. It is highly necessary for a child at the age of acquiring his mother-tongue to have a good memory; new impressions come so thick and fast that he has no time to think. His mind at this stage is specially adapted to remember easily and without aids. Hence the master's little "memorial tricks" are mere cumbrances to a child.

Retrospection. A far more reliable method for the schoolmaster is that of retrospection. We have all once been children like those who are under our charge.

It is possible for us to look back to that time and analyse ourselves as we were then. Many teachers, for example, have a fond idea that children may develop some affection for them. This ideal is one of the most cherished possessions of the schoolmaster, that the children may love him as he loves them. But if the teacher looks back to his own schooldays, how many of his masters in those days did he really *love*? Was there one (before the age of adolescence) for whom he cherished the smallest atom of affection in any real meaning of the word? For my own part, I doubt; I have asked others, and they doubt. A child's attitude to his elders is one rather of fear or simple dependence.

Retrospection is not a safe guide. The memories of childhood are apt to be coloured by the years through which they pass in coming to us. Again the assumption is made that the childhood of one is the same as the childhood of another. This may be corrected by comparing our own memories with those of others. This is a most helpful method. Perhaps it is the most helpful of all. For a grown man can think more accurately about the past, if he has cultivated the power of looking back, than a child can speak about the present.

The practical application is that the teacher who wishes to understand children should cherish the memories of his own childhood. There is no more valuable possession. And no higher tribute can be paid to our childhood than that we call for its assistance in making the childhood of those with us now as happy as may be, so that they in their time may cherish the memory.

INDIRECT.

Mind expresses itself in body. One might say that this is its purpose or function. Physical acts may therefore be taken as representation of mental states. The difficulty is that the representation is not com-

plete or accurate, and, as said above, the chief danger of error lies in our interpretation.

Ordinary Observation. This is the simplest case in which our mental states are interpreted by physical signs. Smiles and tears, scowling, general limpness of the muscles are interpreted in everyday life as indications of joy, sorrow, anger, fatigue. A skilful class teacher can train himself to recognise by the minutest indications the exact frame of mind of a boy to whom he is speaking—whether he is taking it to heart ; or of a boy who is speaking to him—what is his real attitude and meaning, whether he is trying to make favour, or really wants what he asks, whether he is trying to avoid punishment or is really sorry. So, too, he can catch the tone of a class from the way the boys sit, and the look in their faces, the tiny sounds and movements which are inseparable from a group of children. So, too, a skilled inspector or headmaster during a brief passage round a school can tell more of its general tone than many of the class masters themselves.

It is not that these signs are accurate or clear. Indeed, the language of the body is full of synonyms : tears may mean joy or sorrow, limpness may be fatigue or disappointment or boredom. But they are the signs in whose interpretations we have most daily practice. The “schoolmaster’s eye” should be as proverbial as the “miller’s thumb,” the chief asset of his profession. It is an eye which unobserved takes in all these tiny “characterisms” during the course of conversation or lesson.

Child-Study. Child-study consists in examining a large number of children on such questions as Religious Ideas, Ambitions, Favourite Games, Favourite Studies, Fears, etc. The aim is to get a statistical representation of the consensus of opinion amongst children. It has the advantage that questions of profound interest can be investigated, and results which have the value of generalisations may be obtained. On the other hand, the child is a very poor introspectionist : he does not

think much, and he does not really know what he thinks. Moreover, a boy is a short-sighted creature, easily influenced by the circumstances of the moment. The last new game is his Favourite game.

For this reason some are inclined to put more faith in the Individual child-study. A parent or teacher may make a diary of the sayings and doings of a particular child lasting over a number of years. In this way the sudden whim which is the disturbing factor in Collective child-study may be avoided. On the other hand, the Individual child-study is a single story. It does not reply to a special question; nor has any of its evidence the value of generalisation.

The study of the opinions of a large number of children is valuable if the class is carefully limited and well covered—if, for example, the investigator takes the religious opinions not of all children but of "Defective" children, and of defective children Blind children only, and of blind children only those blind before the age of fourteen years. A small group of this kind is easily covered, so that the children questioned form a reasonably large fraction of the whole. Moreover, the conditions are comparatively uniform. At the same time, when a smaller class is taken, *e.g.* of 10,000 members only, so that very few children (*e.g.* 2,500) have to be examined to obtain a representative proportion, more questions can be asked of each individual child. This serves as a great check on the passing "whim." Indeed, a detailed examination of ten children is worth far more than a single answer taken from many thousand, inasmuch as there is no criterion of the genuineness of the single answer.

The practical application is, first, that the teacher should do all he can to assist any child-study investigation which comes in his way. Questionnaires are frequently sent round; they are a nuisance; but if they proceed from a responsible investigator it is one's duty to give all the assistance possible. In questioning children under fourteen years old, the best result will

be obtained by employing as questioners chosen girls of eighteen or twenty years old. The children are sometimes afraid of an older woman, and are always reticent with a man.

With regard to the individual study the teacher should make an individual study of every child in his class, especially the odd child and the duffer. The odd child is often the child with unusual capabilities; these capabilities must be developed and given a sound basis so that the oddness may disappear. The duffer is one whose powers have not yet been discovered. Stupidity in nine cases out of ten is a confession of failure on the part of the schoolmaster. A stupid boy is one who refuses to become "normal." It means that the boy has powers, but that his powers are not called out by the narrow range of school subjects. Language occupies more than half of the school timetable; if a boy has not the gift of language he is "stupid." But he may have at the same time a memory for other things than words, for ideas; he may be a brilliant historian, business man, politician or philosopher in embryo. The more practically useful the boy's talents the less likely they are to be discovered at school. For the school is very far from life, and the schoolmaster very far from practical.

Lastly, the schoolmaster may here do well to remember his own childhood. How far did anyone then understand his real talents and aspirations. Supposing he himself had been "studied" then; his daily doings (as seen by the studier) set down in a little book, with glib judgments and generalisations upon him interspersed, how near would these have been to the truth? How far were the school reports of the past anywhere near to the truth? The things which grown-up people do not see nor hear are just the things that tell most. Even if they saw them they would not understand the thought which lies behind; we did not understand it ourselves.

If the teacher is to study children he must from first

to last be impressed by his profound ignorance. It must be remembered that the child knows himself best, and even he knows very little.

The teacher should read Kenneth Graham's *Dream Days*; this is an example of the Retrospective Method. He might then read some of Earl Barnes' *Studies of Children*: this is an example of the Collective Method. *The Invisible Playmate* shows the Individual Method. Let him then collect any private writings preserved from his own childhood or adolescence, and add to them the writings of any other children to which he can obtain access; these are the nearest obtainable approaches to the real. Let him consider how nearly each of the above three methods agrees with these writings.

As a personal opinion the author would say that Retrospection is easily first: next is the Individual study; here we have rather a father's introspection than an impartial record of a child's life. Last comes the Collective child-study. We cannot but doubt the fundamental proposition of this. It seems dangerously like an attempt to "uniformalise" children's souls when we add them up and find averages as if they were apples. The schoolmaster's great trouble is that children will be so different. This seems to pander to, instead of facing, the main problem.

Physiological Study. The study of the structure and work of the brain and nervous system hardly concerns the teacher. A general knowledge of the main principles helps him in his other work; a general knowledge of Mental Hygiene, the laws of fatigue and boredom, of health from the point of view of intellectual work, a few ideas on mental pathology, overwork, hysteria, insanity, are of value. More than that is beyond the powers of the student. The physiology of the nervous system is a lifetime's study, and requires an expert.

Psychological Experiment. Only within the last two generations has psychological experiment come to the fore. It occupies now a premier position as a method

of research, and has done much to raise psychology to a level with the exact sciences. Instead of arguing about memory, instead of studying it in children under uncontrolled circumstances, a modern psychologist arranges laboratory conditions, and, often with the help of ingenious apparatus, studies memory with almost as great exactitude as a chemist might analyse a substance or a physicist measure a force. The method of the Experimental Psychologist is to obtain work done under controlled circumstances, and express it statistically. He might, for example, set the subject to learn certain words by a fixed method; he would control very carefully the rate at which the words were presented, and the manner of presentation; he would make his experiments at the same hour each day. Finally, after obtaining a large number of data he would proceed to treat it mathematically, discovering, for example, the effect of age or sex difference in the learning of words, or the correlation between power to learn senseless syllables and ability in acquiring languages.

Experimental Psychology thus provides a basis of fact to go upon. No amount of argument can prove the characteristics of the child's Attention; no amount of mere observation can give reliable results. Most of the greatest recent advances in methods of teaching have arisen from experimental investigations. Many educational fetishes of the past have been upset by the same means.

Here again an expert is needed. The publication of the results of badly conducted experiments only throws dust in the eyes of the skilled investigators, and discredits the science in the opinion of the public.

The teacher's duty is to take an interest in the progress of the work. He should fully understand the methods of investigation, and should be able to criticise and interpret the results. He can best obtain this power by doing actual psychological work for himself. Expensive apparatus is not needed. The greater

number of tests require no apparatus at all ; in many of the others apparatus is not really essential ; again, much of the apparatus used can be constructed in a simplified form by any one with mechanical ability.

But it would be the greatest mistake to suppose that such results, even if there were the fullest facilities in the way of apparatus, are of scientific value. In some cases they may be. In such cases the best use which can be made of the results is to communicate them with a full account of the conditions of the experiments to an expert investigator. If the results are of value the teacher need have no doubt that he will receive the fullest credit for them. But, as a rule, the teacher's duty is to follow and repeat the experiments of the great Psychologists, and to judge of their worth and accuracy. If then they appear satisfactory the expert knowledge of the teacher has its place. An experimental psychologist is not a teacher ; when he attempts to apply his results to practical teaching he usually makes blunders, for he knows as little of the class-room as the teacher knows of the psychological laboratory. Much very fine work has been discredited by false applications : the psychology of language has suffered much from the psychologist's attempt to apply. The Direct Method may be scientifically correct, but it is largely impossible in practice. The Psychologist has been compelled to make such applications of his work simply because the teachers have not had either the initiative or the qualification to do their part of the task. £860

The schoolmaster should collaborate with the Experimental psychologist, and the psychologist should welcome his co-operation in the application of the results obtained.

Intuition. All the methods mentioned above are open to one serious criticism—that of materialism. We said that Dynamic Psychology was trying to discover Laws of Thought, and questioned how far that is possible. We said the Collective child-study was

trying to reduce children to uniformity in trying to find an "Average Child." A Law of Thought means an "Average" process. So an Average child is a "Law Child" or Type. These are scientific methods. Laws and Types are the natural product of the scientific mind.

Man's mind, like his body, has evolved. The body has evolved for the sake of living. Our hands are shaped as they are because that shape of hand best helps us to live. Or, in another way, all men who have not had that kind of hand have been unable to live. Living means adapting one's self to one's surroundings, and (more especially in the case of a man) adapting one's surroundings to one's self. These surroundings are material. So the hand has evolved to its present shape so as to deal with matter more effectively. The brain and nervous system are the directing agency of the body. The most primitive animal had no nervous system except an ingoing fibre telling it when food was in its mouth, and an outgoing answer to swallow it. From that man's mind has evolved, Why and how? To help the body to deal more effectively with matter. Man pre-eminently is a builder, a maker. We shall see when we come to examine the nervous system how the brain seems specially constructed for that purpose. Its tendency is to split up things, to analyse and synthesise, or, in other words, to break up a thing and see how it can be put together again to make something else. Matter is divisible: mind is intended for dealing with matter: mind tends to divide. Matter is extensive and uniform.

Man tends to divide, to analyse, to make laws, to find uniformists, because matter is divisible and uniform. But when man, the constructor, applies his workshop-logic to an indivisible transient thing, Thought, and Life, his whole method and tendency is wrong. Immediately you divide the continuous change of thought and life, they cease to be; you have denied them before ever you started arguing. It is as if before

arguing about matter you had denied its extensivity, you had denied that it occupies space, therefore that one thing cannot occupy the same space as another and be the same as another; your whole argument would tend towards nonsense from the beginning.

So with man's scientific study of Mind and Life. Experimental Psychology aims at statistics. That is, it tries to get numbers. Numbering involves division. One cannot count a heap of apples without mentally dividing it, *i.e.* considering each apple as a separate thing. But each thought cannot be considered as a separate thing; it is part of an indivisible whole; separate it and it and the whole cease to exist. Experimental Psychology tends to fallacy from the start, immediately it touches the real live processes of mind.

Child-study tends to make Laws and Types. A law means that under given circumstances something will be repeated. Under given circumstances an apple will fall to the ground again. A type implies that the same thing can be met with again and again. But the same state of mind can never occur again exactly identical. For one thing the mere fact that it is a repetition makes it different; it is a memory. You can come across the same apple again: but the *same* event cannot happen again: the second meeting is a different meeting: it is a new mental event.

Child-study from the very outset in trying to find uniformity denies that life is life. It makes the children into dolls.

How then can we know a child?

Man is a maker, a divider, and putter-together. But what of woman? Woman's duty from the first has been the bringing of life into the world, the nursing and tending of it—the understanding of it. She does not understand as we do. She does not do this or that for the child because of this Law or that Law, as if her child were a doll. She does it because she feels it, because she is in tune with the child; she has an INTUITION of its wants and of its self. Intuition is not

an argument. It is a form of feeling rather than of thought.

Nature's way of understanding is this Intuition. There is no reason to suppose that man does not possess it. Physiologically the sexes are half identical. Only we have differentiated ourselves ; we have specialised. Man has gone after food and housing ; he has cut up and put together wood and stone and iron and steel until he has got into that way of thinking as if life were wood or steel, always the same, not changing, cut-able-up, and put-able-together again.

For that reason our schools treat children as if they were all the same. And the schoolmaster, in despair because they are all so different, cries for a Psychology, a Science which will show these differences to be only apparent, like the apparent differences of a painted piece of wood, that they are really all identical, cut-able-up and put-able-together again into a uniformity.

If we are to know—at least this is my belief—we must know by the sympathy of life with life. We must feel it as a part of us. We shall know when we are right, when we *feel* the children to be all profoundly different. It is this gift which makes the born psychologist, and, far more important, the born schoolmaster.

CHAPTER IV.

THE NERVOUS SYSTEM.

PSYCHOLOGY is the study not of the external world but of ourselves. We may divide Ourselves (since Death makes the division) into The Body (of which the brain is a part) and The Consciousness. The Consciousness is the proper study of Psychology. In order to understand it we have to study also its material representative in the body.

The Relation of the Brain and the Mind. What is the precise relation of these two factors, Brain and Mind or Consciousness? Is thought a product of the brain? Or is thought an independent thing, an unrelated concomitant of cerebral action? Are both brain and thought merely two appearances of the same reality—a third something quite different from both? Do thought and the brain react on each other; there is thought, but thought is of a certain kind because of the nature of the brain?

Perhaps the last is the best view to hold as at least a working theory. Thought and nervous processes, nervous processes and thought always occur together. Abolish thought and the brain lies idle; remove the brain and thought ceases. When things appear and disappear together they must be causally related.

It would, however, be untrue to say that one causes the other. The cause always “passes over” into the effect. Suppose we say that the action of the nervous system causes thought, then the nervous system in

producing thought is modified. What modifies it? Thought. It would be equally true to say that thought produces the action of the nervous system.

Perhaps this is only a way of avoiding the problem. Still it is useful. The great thing which must be remembered in dealing with Psychology is that we cannot leave the brain out of account. Nor, on the contrary, can we suppose that when the brain is explained all is settled. Brain action is not thought any more than the movement of the pen is the production of literature. The brain without thought is emptiness; thought without the brain is purposelessness.

The greater danger and the more common is omission to consider the brain. Many students will fully understand their physiology, will fully admit the essential part of nervous action, yet they still cling to the thesis that the brain exists for the sake of thought, forgetting the complementary truth that thought exists for the brain, which is an organ of the body; thought is for the body.

The fundamental thing is Life. The brain is director of the life of the body. We think to live, to live as fully and as completely as possible—but to live. High thought, æsthetic rhapsodies, poetry, science, are all aids to life. Thought apart from the brain, apart from life, is purposeless.

It is just because this side of the truth (the brain's function in the body, thought for life) has been forgotten that we see daily a purely intellectual education. A purely intellectual education is only half the truth. It is the natural outcome of a purely analytic psychology which neglects the physiological side.

Adaptation. An animal lives in a world of heat, cold, food, poison. This world is continually changing. The animal, like a reed, must bend to the changing winds. The reed is *shoved*. The animal responds; he anticipates being shoved; he either goes or he thrusts back. The reed is passive. The animal is passive-active; his sufferings realise themselves in actions.

The reed is shoved whether it likes or not, whether it is to its advantage or not. The animal (and above all man) in response to every impulse changes himself so that it may be to his advantage, or at any rate not to his disadvantage. He gets driven where he wants to go—or else he gets out of the way of the impulse.

The living reed has responded so that the impulse may not be to its disadvantage. It has grown pliable so that it may not be broken. It does more; it grows so that the impulse may actually be to its advantage; for it grows its seeds light and fluffy so that the very force which might be the agent of its destruction is made the foster-parent of its offspring.

Man has one peculiar gift—that of modifying his surroundings—of changing the nature of the impulse or directing its forces.

Man has a second peculiar property. The reed responded in growing pliable simply because all the reeds which did not respond were broken and destroyed. Man allows no such waste. He teaches his offspring to respond so that there may be none who do not respond and hence be killed off. Man uses education as a substitute for natural selection. Education consists in teaching the child how to respond to the world.

Man has further negated natural selection by modifying the world which makes that selection to suit his own weaknesses.

If, then, the Education proves an inefficient substitute, and does not teach the child to respond, it will be necessary to modify the world still further to suit a greater weakness. But as each generation (owing to an ineffective or purposeless education) becomes less and less capable of adaptation, the power of modification will steadily decrease until man's efforts are no longer able to mould the Universe to the calibre of his own increasing insufficiency.

The negation of natural selection without an equiva-

lent substitute will degenerate man to such a stage that natural selection will necessarily recur. But it will not be a rejection of individuals : it will be a rejection of a species.

Baldly, if natural selection of the best adapted is defied, an effective Education must be devised as a substitute. Otherwise the presumption must most certainly be visited on us. Man has done something outside the rules of the game : consequently he has no destiny, no providence. Unless he shows himself capable of inventing a new procedure as he goes along, he will be ignominiously ruled out of order.

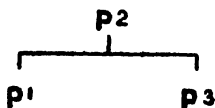
The "invention of the new procedure" lies with Education. The problem of education is, "Can man teach his offspring to adapt themselves instead of leaving nature to pick out the best adapted?" At present he is most unquestionably failing to solve this problem. The Education is not adapting his offspring.

Active and Passive. The body is merely a thing like a dead reed. It must be taken care of. For this purpose there must be ingoing nerves saying what is happening outside—what changes are happening in the world which will affect the body. These nerves must lead into others, outgoing nerves which will cause adaptive changes in the body. The ingoing nerves are sensory, coming from the eyes, ears, nose, mouth, skin. The outgoing nerves go to the muscles, glands, and internal organs. There are other return nerves which give information as to what has been or is being done so that modifying messages may be sent. Thus a return nerve from the joints and tendons of the leg gives information as to how high the foot has been lifted. Is that high enough yet to clear the step? Perhaps a further message may have to be sent.

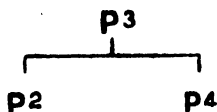
The internal organs are affected by internal stimuli—the stomach by the presence of food within itself ; ultimately, however, the stimulus came from outside.

The Development of the Nervous System. The structure of every living thing represents a series of

adjustments of its race to the surrounding circumstances. Pliability is the adjustment to surrounding circumstances of the race of reeds. This adjustment takes place by a gradual elimination of the less adjusted. If P^2 = two degrees of Pliability, then suppose that P^2 has two offspring



since the children vary about the parents in both directions. Of these P^1 being less adapted dies. P^3 has two offspring



of whom P^4 survives, and so on until P^{10} is reached. Beyond P^{10} the pliability may be excessive. In this case of P^{10} 's offspring, P^9 will survive and P^{11} perish.

Thus an organism becomes more and more adjusted. At the same time, because the external world is infinitely complex, it becomes more and more complex.

In this way, because of the creature's varying children (some worse, some better), the more "worse" continually die and the less worse continually survive. In this way the nervous system of man has evolved. The more complex has continually survived until the present stage of complexity has been reached.

The amoeba, a shapeless jelly-like creature floating in water, exhibits the earliest example of a response to outside influences. For instance, contact with food causes its pseudopodia (or a thrust-out piece of its jelly-like body) to flow round the object. The food is split up inside the amoeba, and the useless particles are ultimately ejected. On contact with an irritating or dangerous substance the pseudopodia retract and

thus cause the amoeba to flow away. Although no definite nervous system can be detected, these movements certainly depend on the integrity of the nucleus.

We may suppose as the second stage the segmented worm. This exhibits an early form of a definite nervous system, but without centralisation. Each segment contains a sensory nerve connecting with a motor outgoing nerve so as to cause response to outside stimuli. But there is no central system, and the nervous connection of the segments is extremely simple.

The Development of a Central System. The animal goes towards his mouth. Hence the mouth-end usually meets the stimuli first. The mouth-end must, therefore, have sensibility more than the rest of the body. The development of this greater sensibility, and the evolution of special sense organs (instead of a general feeling of touch), involves a development of the outer covering and of the muscles of the front-end to protect this mechanism. The increase of the mechanism and of the protective apparatus crowds out the visceral system of that segment. Thus the front becomes the Thought apparatus, and the rest does digestion and motion. These must be brought under control of the front-end.

A second development occurs when the back-end becomes specialised for motion and the viscera are driven to the middle.

In the first stage we had
Sense organ,
Nerve going to muscle,
Muscle.

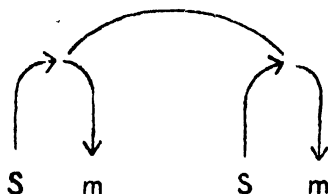
In the second stage we have
Special sense organ,
Ingoing nerve (to the front-end),
Outgoing nerve (back to the muscle controlling
the seat of the disturbance).

The Levels. An arc of ingoing sensory and outgoing motor nerve is linked up with another arc.

This renders possible the following combinations :

$$\begin{array}{c|c} S^1 + M^1 & S^2 + M^2 \\ S^1 + M^2 & S^2 + M^1 \end{array}$$

For example, an ingoing sensory impulse from the organs of touch may elicit its proper motor response—to wink; but it may also elicit another motor response—a flood of tears. Moreover, the wink-muscles are connected with other sensory organs, so that other things than an irritation of the eyelid may cause a wink, *e.g.* the sight of an approaching object may cause it. Thus the motor nerves of the wink



are connected with the Touch nerves of the eyelid, and also with the sight nerves of the eyes. In this way there are :

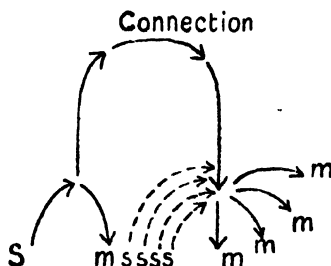
1. Multiple reactions—of several simultaneous movements in response to one stimulus.
2. Multiple stimuli—many different stimuli may awake the same reaction.

There are little groups of nerves, *e.g.* of wink and simultaneous flow of tears. These little complete groups may be connected across with other complete groups forming a second whole. One might compare the connecting up of two machines so that each might be started separately. But by a different switch both might be set going simultaneously.

Again, the groups of second connections are connected up into larger wholes. With each successive grouping the degree of consciousness becomes greater. These successive groupings are called "LEVELS."

Thus, when a stimulus impinges upon a sensory organ it sends a message to its nearest motor response, and at the same time a branch current goes up to a more complex response, and thence to a higher level.

The higher level connects together sensation-movement groups of lower levels. The higher level is simply a more complex organisation, a higher coordination, rendering possible greater complexity of action and greater range of choice.



The work of these levels may be seen most clearly in the case of drunkenness or the action of drugs. The highest levels, which were latest developed, disappear first. Thus during intoxication the subject is at first merely unable to think, later the more complex coordinations of the muscles become impossible, later still the simple reactions fail, such as the removal of the hand from pain or the contraction of the pupil at a bright light.

The first level is a pure reflex, such as the start back from pain. There is no element of choice or of thought in it. It is done unconsciously. It includes also at an even lower level the beating of the heart and the work of the viscera generally.

On a higher level there are such acts as a cough which are almost automatic, but involve more consciousness, and a great latitude of choice, *e.g.* a cough can be prevented.

In the highest level there is fully developed thought. Thus a child, in descending grades of levels, may be reading, chewing a sweet, adjusting his pupils to the light and arteries for blood pressure.

The higher the level the more are we able to see possible responses, and the larger the range of choice amongst memories of what we have done in the past and might do now. As the response is less immediate, the longer also is the pause for selection.

The Structure of the Nerve. We have spoken thus far as if the nerve were merely an electric wire, and as if the brain and nervous system were merely a collection of such ingoing and outgoing threads. For ordinary purposes this description is quite satisfactory. A teacher does not have to dissect or operate on his children, nor does he even have to prescribe for nervous diseases. For the purpose of an elementary knowledge of psychology a general idea of how the nerve works is all that is needed.

Two questions arise :

1. Whence comes the electricity for these wires ?
2. How is it that these wires remember ?

A nerve is made up of a little bulb or nerve cell, out of which at one end comes a mass of branching foliage, and at the other end a long string with a few collateral twigs.

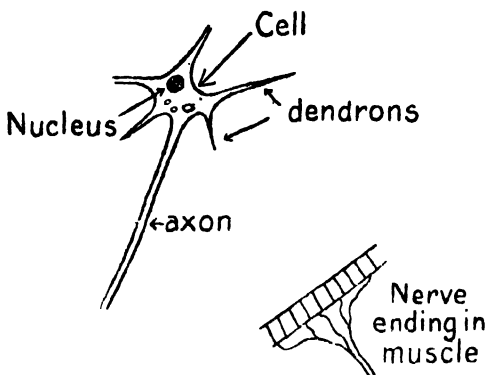
Suppose a stimulus falls on a Touch sense organ of the skin, this impulse passes into the nerve cell *via* one of the twigs of the dendrites. The nerve cell is a storehouse of energy : it is like a heap of gunpowder in a round box to which a trail of gunpowder leads, save for this, that unlike gunpowder the nerve has, after explosion, the power of self-rejuvenation. The streak of chemical change coming along from the dendrite is intensified in the nerve cell which it explodes, and an intensified impulse goes along the axon and so into the connecting dendrites of another nerve.

The process might be compared to a metal tube with a bulb in the middle, all full of gunpowder. The path

to the brain is made up of a series of such tubes. The bulb in the middle intensifies each impulse that reaches it so that a mosquito bite on the skin passing round *via* the brain may end in a stimulation of the muscles enormously greater in force than the original prick.

The Synapses. Each nerve has many branches, and each of these branches connects with other nerves. How is the impulse to choose its path ?

When one nerve fibre meets another it never actually touches. It clasps without actual contact. This "clasping" or Synapsis offers a certain amount of



resistance to the passage of the nervous impulse. But every time a nervous impulse manages to pass over the junction this resistance is somewhat lowered. Let us suppose now that a nervous impulse comes to the meeting of many ways. It will pass along the way which offers it the least resistance, and its passage will leave that resistance slightly lowered.

Some of these resistances are born low. There is, therefore, a congenital predisposition for the nerve impulse to pass along those paths.

Others are lowered by what we ourselves do, by the frequency with which we allow impulses to pass along that route. Hence memories and habits. All

memories and habits are made up of groupings of past sensations and motor impulses of sensory and motor nerves. The deepest habits and memories are those where the resistance has been most completely broken down. There the route is easiest, and stimuli are most likely to pass along it again.

If the path is left long undisturbed the resistance will slowly increase again. Hence forgetfulness and the loss of habits.

Fatigue and sedative drugs increase the resistance. Hence the slowness of thought under those conditions. Good health and repose decrease the resistance ; hence greater facility for work.

A path of lower resistance will steal the impulse from one of higher resistance. Hence doing one thing makes us forget another. Work kills grief. The channel of working drains the other.

In this way when a stimulus comes into the brain not only is a range of possible actions presented for choice, but a range of past experience. Those things are presented which have been experienced most frequently in the past, and they are presented with greater or less vividness according as they have been felt with greater or less vividness. Moreover, those possibilities of action are most vividly presented which the race in the past has found most useful, and to which there is therefore a congenital tendency.

The brain, the centralised junction of the nervous system, is then a means of presenting for choice possible reactions to the stimuli received from our surroundings. It presents those possible actions according to the individual's own past experience, and the past experience of his antecedents.

CHAPTER V.

FATIGUE.

What is Fatigue? Fatigue is a lessening of efficiency. It may be a lessening of any efficiency, muscular, mental, or sensory. In muscular fatigue I cannot walk, in mental fatigue I cannot think, in sensory fatigue I cannot see or taste.

This fatigue may be specific or general. It may be that I am tired all over. The incapacity of my legs may be merely a symptom of a general tiredness. Or it may be that in all other matters I am fresh, but my legs only are tired.

The fatigue may be complete, or it may be partial. We said above "cannot walk." Fatigue is seldom as extreme as that: usually it is "cannot walk so well as I did." Fatigue is a tendency towards complete stoppage of work. To give a makeshift definition, "Fatigue is a temporary specific or general, total or partial, incapacity to work due to previous exercise."

Where is Fatigue? Inability to walk obviously includes two elements. Walking is a muscular movement and an effort of the will. I should cease walking just as much if you cut my head off as if you cut my legs off. In the one case the failure would be in the nerve which gives the command; in the other case in the muscle which executes the command. Fatigue may be in the nerve or in the muscle.

This is seen very clearly in the experiment where a muscle may be stimulated *via* its nerve until complete

incapacity ensues. The muscle may then be stimulated direct, and it will be found that there are still several more "kicks" in it. Fatigue of command and fatigue of execution are quite separate.

In thought the fatigue must be mainly neural. One would be inclined to say wholly neural. But for some time it has been realised that mental fatigue is nearly always accompanied by fatigue of the body. Thus Mosso's Ergograph endeavours to measure mental fatigue by measuring the activity of a single muscle. It is found that an hour's brain work greatly decreases the muscle's power. Conversely, your own experience informs you that the power for mental work is greatly decreased during severe muscular fatigue, even though no thinking has been done at all. Mechanical Sandow exercises can tire the brain : passive thought, motionless in an armchair, can tire the muscles. How is this ?

The close relation of body and brain is a platitude, but it is a platitude the precise bearing of which is apt to be misconstrued. Cases are quoted in which starved bodies have been found with the brain intact. The moral of this is that the whole body supports the brain. Therefore sound physical health is essential if the school children are to do their mental work well. The implication is that the mental work does not tend to improve the children's physical health ; and that the only value of physical health is so that they may be able to do their mental work. In fact, the whole argument is based on an assumption that the body exists for the brain, and that the end and aim of life is brain work.

Let us view the subject from a different aspect. The brain is a part of the body. Both brain and body are parallel and co-operative instruments through which (to put it as vaguely as possible) a certain vital impulse manifests itself. The brain thinks in terms of bodily adjustments ; the body acts in terms of the brain. The thoughts which are presented to the brain are

possible movements ; its function is selection ; some of them are allowed to proceed (i.e. are-attended to), some are not. Weariness of the brain means weariness of movements : weariness of the body means weariness of movements. It is impossible to draw a line between body and brain. Any line must be artificial. Both together constitute one process of adjustment, and fatigue is weariness of adjustment.

Muscular and mental fatigue are distinct, but they are correlative. Wherever separation is made we may be quite sure that there is something wrong.

Boredom. There is a third sensation very closely allied to muscular and mental fatigue—namely Boredom. When a child says that he is fatigued and we test his capacity we find that it is decreased, and it is decreased in relation to the sensation of fatigue. But in the case of Boredom there is no such relation. The feeling of Boredom or false fatigue is no indication of muscular or mental incapacity. If a class is really weary, it is partly unfit for anything : change of subject will make no difference to it. But if a class is bored, a change of subject will probably dispel the boredom.

It is curious that when so many school subjects are finding the attention of the Psychologist, so little thought should have been given to this. Nine-tenths of the educated children of the world must probably be bored for several hours every day. A child is very seldom really fatigued. Let him out of school and he has always a shout in him. But very, very few children pass a day in school without being bored at some moment in it.

This is not intended to be humorous. If so large a part of the child's life in school is spent in boredom, boredom must be of very considerable importance to the educationalist. Boredom may or may not be of value. The early Victorian considered it of value. It was thought an admirable training for a child to be made to sit still.

The symptoms of boredom are a restlessness at first,

gradually developing into irritability. This passes after a time into lethargy and stupidity. This is very different from fatigue. A fatigued child starts dull and heavy; only with persistent stimulation he may gain a neurotic activity. In fact, the symptoms of boredom are practically the reverse of the symptoms of fatigue.

The Chemistry of Fatigue. Fatigue is "loss of energy." But that is no explanation. An electric battery is giving no power. "Loss of energy" hardly explains. It may be a case either of polarisation, by which the expenditure of the energy is prevented, or of a worn-out zinc, in which case the materials of the energy have been consumed. So with the body. The body is a collection of living cells. These cells have the power of building up round themselves substances from the surrounding world. These substances, which are built up by means of energy, are capable of being broken down so as to produce energy. In the same way a piece of coal represents an original sum of energy which went to form it: under certain circumstances that original sum may be recovered. The body builds up proteins, carbohydrates, and fats. The energy of the body comes from the breaking down of these substances into

1. Energy in the form of heat or motion.
2. Simple substances, which correspond to the ashes of the coal. These are passed out in the urine, breath, and sweat.

Fatigue is a using up of complex energy-producing substances, and an accumulation of simple waste substances which act as poisons.

The Value of Fatigue. Life consists in continual metabolism and katabolism, in continual building up and breaking down. Each time substances are broken down they are replaced in greater quantity. If I exercise my arm I break down energy-producing substances. When the effects of the exercise are repaired and the damaged part is built up again, it is built up

stronger than before. My arm after recovering from the fatigue of exercise is stronger than it was. So long as this building up in excess continues, the organism grows. When the building up is in deficit, old age and progressive weakness set in.

The process of destruction is essential to the process of growth. If there is to be restoration, there must be damage. The more full of energy the organism the more will it be liable to katabolism and to the subsequent reconstruction. The more full of energy it is the more it will hunger for such katabolism.

The Hunger for Fatigue. Hence the hunger for fatigue.

There is a certain sex difference with regard to metabolism and katabolism. The man tends to katabolism ; the woman to metabolism. In other words, while the woman tends to hoard her energy and accumulate by saving, the man tends to gamble and gain by the greater return. The reason of the woman's metabolic tendency may be the future call of childbirth. However that may be, a boy is in the first place a growing animal, and for growth katabolism or vigorous expenditure of physical energy is necessary. The boy is, in the second place, a boy, and hence possessed of a natural sex hunger for the squandering of energy.

There is one desire in male children and only one ; to do up to the limits of doing, to think, run and hit and shout until exhausted. The hunger for fatigue is the hunger for growth, and the hunger for growth is the impulse of life itself.

Boredom and Fatigue-hunger. Boredom arises from monotony, from obstructive difficulty, from quiescence. All of these contain the same factor ; namely, absence of opportunity for activity. The monotony of the sermon consists of the fact that we are made to sit still without power of response. Such quiescence is a condition contrary to the tendency of life itself, a condition absolutely opposed to growth. A long speech is painful enough to the adult ; it is agony

to the child. An old man can put up with it. We have seen old men sit through conditions which would be a sheer impossibility for a boy. Women, too, can endure more. In both cases the system is less katabolic : the hunger for fatigue is less acute.

But a class-room lesson, however much answering it involves, is the very opposite of the child's whole life-tendency. He is made to sit still, to talk instead of doing, to learn under some one's guidance instead of being a pioneer for himself, and he is bored.

Boredom, then, is the hunger for doing. It shows itself first in fidgeting and restlessness. It becomes irritability and ill-temper. Finally, the crisis passes ; there is a sort of despair. The mind settles into a lethargy, a false fatigue, which is its only substitute for the alternative insanity. The child has received another lesson in NOT TO DO.

The Dangers of Fatigue. It is possible to destroy so quickly that the process of reconstruction cannot keep pace. Or again, it is possible to destroy so completely that the damage is irreparable.

Serious damage may take two forms. It may be due to exhaustion of energy so that there is no energy left for the work of repair. Or it may be due to a cumbering of the body with waste products so that the poisoning is so great that the work of reconstruction cannot be carried on.

Serious damage in the muscle is guarded against by the fact that the nerve which carries the message refuses to conduct long before complete exhaustion in the muscle can occur. Serious damage in the nerve is prevented by the synapses, the resistance of which become non-conductive long before the complete fatigue of the nerve.

As a further precaution the feeling of fatigue occurs long before fatigue reaches a dangerous point. Under normal conditions it would be impossible to reach the degree of fatigue caused by a dance. The music, rhythm, alcohol, excitement, cause a bluntness to

sensations of fatigue. If these sensations were felt at their full intensity, we should give up long before the actual point reached under these artificial stimuli.

Thus the body is guarded against depletion of energy, first by the sensation of tiredness, and secondly by the premature non-conductivity of the nerve.

THE SOURCES OF OVER-FATIGUE.

External Pressure. A child stops playing when he is tired. He plays because it gives him pleasure. When he is tired, play no longer gives him pleasure : its continuance would even cause him pain : so he ceases. This is a natural healthy tendency. When the child is working, up to a certain point, if the work is well arranged, the self-expression gives him pleasure and is doing him good. After a certain point it begins to be injurious ; at that point it begins to become painful, and the child wishes to stop. But he is compelled to continue by the fear of a greater pain than the fatigue or self-poisoning, *i.e.* a punishment, possibly in the form of more self-poisoning, an "imposition" or Detention.

Internal Impulse. Where the impulse to work arises from the child himself, the chances of fatigue are less. The pleasure of reward may over-balance the pain of fatigue. Just in so far as the child can think relatively and do one thing for the sake of another, so far he will be liable to forget a temporary fatigue for a larger aim.

On the other hand, in work from internal impulse the labour can be arranged in the most economical way possible. One can work hardest when energy is highest : work during fatigue or disinclination costs far more than the severest effort made at the right time. Class-room work is the most uneconomical possible : the child is made to work utterly independently of his own impulse. When he has much

energy he cannot expend it. When he has little energy he is over-strained. The standard of progress is not the standard of capacity. It is an external standard enforced by punishment.

The teacher's duty with regard to the child is not to drive him along a path, but to teach him how to go. His duty is to teach the child how to work. This must largely be found out by the child himself. The best worker is the man who knows himself best, when and how he can do things easiest, at what point it pays to knock off. The feeling of tiredness is not a safe index of loss of power. The child must find his own Plimsoll mark—just where does tiredness mean something, mean that he will suffer afterwards. He must learn, too, to disregard the sensations of a meaningless fatigue. But labour under real fatigue is costly and unproductive. Hence at a certain point it ceases to pay to continue working. It will be more economical to knock off and do the job at some other time. The child must find his own point of non-productivity.

A certain amount of work has to be done in the day. Whether it is done or not, or whether it is well done depends largely on how we economise our powers. If I am made to work in a certain way for certain hours, without looking up or taking a turn, it is quite possible that I may be forced into over-fatigue, because I am not given a chance to utilise my powers to their best advantage. Half the art of getting the best out of life lies in doing the necessary things in the easiest way, in economising one's strength. It is an art which takes years to learn. It is an art which we can only learn for ourselves. It constitutes the individual business method: the way of working, steadily or in spurts; the times of best production; the method of arranging ideas and business; the method of covering retreat or failure; the method of testing; in fact, all that makes the man a fussy incompetent or a business-man. The school neither teaches this nor allows the boy to learn it.

Does Fatigue Pay? The essential of any good system of work is that it should recognise from the outset that work under fatigue does not pay. The world demands in all the higher professions not quantity but quality. Quality can be produced only in freshness. Secondly, even where high quality is not demanded, the one thing demanded is accuracy. The work may not need much intelligence, but there must not be mistakes. The first effect of fatigue is to produce mistakes. In study the same holds good. Memory depends on the degree of attention given: fatigue's main mental effect is a decrease of attention. Retentiveness depends on freshness. Fatigue not only makes it difficult to learn for immediate recall, but also renders the mind incapable of distant retention. In education these arguments apply with a special force. The child is learning to do things for the first time. On that first impression depends the whole subsequent interest and efficiency. Fatigue breeds distaste and error. To give education under conditions of avoidable fatigue is intentionally to teach mistakes and disinclination.

The Hygiene of Fatigue. Certain conditions make the body abnormally liable to fatigue. That is to say, they make the process of storing energy difficult, *e.g.* bad food. Or they make the eradication of poisons difficult, even actually introduce poisons, *e.g.* bad air and carelessness in the matter of excretion. Or they may prevent opportunity for recovery, *e.g.* insufficient sleep.

These conditions are particularly dangerous as being the real causes of nearly every case of overstrain. The amount of work done in the day, even with a child, is often largely a matter of habit. It is highly unlikely that in a habit will be embodied an amount of work which the individual cannot ordinarily do, or only with a great deal of strain. The habit embodies just that amount which the individual can perform daily under normal conditions. This amount is performed usually quite irrespective of the notoriously misleading signs of fatigue. It is known as a safe margin.

And it is a safe margin, but only so long as the conditions remain normal. There may be a continual deficiency of oxygen, due to bad ventilation or insufficient exercise, or an absence of raw materials of energy, owing to insufficient or wrong food, or there may be insufficient sleep, or irregular excretion of waste matter. In these cases the habitual margin is usually continued irrespective of discomfort, and it eventuates in a nervous catastrophe.

The Teacher's Attitude towards the Hygiene of Fatigue. Hygienic conditions in the school are of especial importance as the child is finding his Plimsoll. On the other hand, if the conditions are made too perfect two consequences follow. First, the child sets his standard of work too high and makes certain conditions indispensable which he will certainly not find in after-life. Secondly, so long as conditions are ideal the child is not taught to consider them. He does not learn how to make the best of bad surroundings. He does not learn to be practical and hygienic. All his hygiene is done for him. He learns to look on health as something which comes as a matter of course, and illness as something for which he is to be pitied.

This is the schoolmaster's fallacy in hygiene. He himself may be an admirable hygienist. So he lets that hygienic instinct find its outlet in the perfecting of his school, instead of the instruction of his boys. The schoolmaster should teach the boys in whatever conditions they may be to arrange things so that they may get the very highest amount of energy for the body: that incapacity, fatigue, illness, are bad management: they are faults just as much as a badly done lesson.

Fortunately the schoolboy is a healthy young animal, and this is the attitude he tends to adopt. Sick persons to him often tend to be looked on as "shamming," and the perpetually sick one as fit only for bullying. Maudlin sympathy has little place in his moral code, for others or for himself.

If a boy is fond of his work ; if it really expresses him, he will be as sorry to miss it as his play. He must be taught to order his life so that he gets the maximum from himself, and that it is his own fault if at any time his energy fails.

Nothing is morally or hygienically more pernicious than the automatically ventilated school. It is symptomatic of our whole attitude of treating the child as a passive receptacle for knowledge, a helpless learning thing, not a doer.

PART II.

CHAPTER VI.

ATTENTION.

General Account. It will assist the reader if we give a general account of Attention before we proceed to criticise or adopt a definite view and deduce its practical application. In this general account we will give a résumé of the common text-book information so as to survey the field.

Definition of Attention. Attention is the selection of a certain object from the field of consciousness so as to gain a closer insight into it. Thus out of the various sights, sounds, etc., at every moment entering my brain, which make up the "field of consciousness," I select one sound, a footfall which I think my friend's, so as to gain a closer insight into it, *i.e.* so as to study it more carefully and know what it is.

The Process. This process is negative and positive. On the negative side I inhibit or cut off all other lines of mental activity. Thus I cease to hear the other sounds of the street while I am attending to the one. So, too, I cease to hear all sounds when I am attending to my book. And when I am attending to the sounds of the street I cut off the mental activity involved in reading my book.

On the positive side it consists in an increase of activity in the one line of thought, and a physical adjustment to the object; for example, turning the head towards it, and focus of the eyes.

Attention results in increased vividness and clearness. Thus attention to a faint sound does not make the sound louder, but it separates it from other sounds (clearness), and at the same time makes its impression on the mind more forcible (vividness). Attention results also in association; thus if I attend to the song of a bird other ideas germane to the subject will be called up in my mind.

Classification. Attention may be classified according to the degree of will involved in it. It may be Voluntary or Involuntary, viz. one may attend as a deliberate act, as in directing one's attention to study (Voluntary): or one may attend as it were accidentally, *e.g.* attention to a sudden loud noise (Involuntary).

It may be classified, secondly, by the reason for which the particular object was attended to. The reason may be (1) original nature, or (2) experience, or (3) accident. For example, we are disposed by Original Nature to attend to a fight; by experience we have formed the Habit of attending to lines of print, for there is no inborn interest in such little black marks; we may simply glance at a paving stone in the street and attend accidentally.

Attention may be classified, thirdly, by the direction. It may be (1) Extensive, or directed outwards to objects of sensation, or to movement; it may be (2) Intensive, or directed inwards to intellectual thought or imagination.

Lastly, some acts of attention end in or aim at a "volition" (or decision) leading to an act, others end not in an act but in an emotion. For example, attention to a game of football (by a player) aims at and results in decisions and acts. Attention to music aims at and results in emotions.

Differences. Attention differs in various people.

It may be (1) Wide, so that the person attends to numerous things at once. Attention is usually wide when one is sitting in a theatre before the rise of the curtain: it encloses a large field. Some people's

attention tends always to be of this kind. The attention of a man engaged in difficult work is **Narrow**. Some people are found always to attend in this way : they keep to one thing at a time.

Attention varies (2) in "**Distractibility**." Some people are easily disturbed from their work ; some, on the other hand, can work through a thunderstorm.

Attention varies (3) in "**Fluctuation**." Some minds pass rapidly from one thing to another ; some remain fixed on the same point.

Attention varies (4) in speed of **Adaptation**. Some minds can be fixed on an object almost instantaneously. But some people seem to take an immense time to "get their minds" on to a thing.

The Child's Attention. The child's attention is **Extensive** or directed outwards. It is **narrow** : he attends only to a very small range of things at a time. It is very liable to distraction. It is very fluctuating. It is very rapidly adjusted.

THE PHYSIOLOGICAL PSYCHOLOGY OF ATTENTION.

Inhibition. Attention consists in the **Inhibition** of other lines of thought and the **Reinforcement** of the one. Inhibition implies a definite negative order, "Stop that thought." It has been supposed by some that this is accomplished by definite **Inhibitory nerves**. There seems little necessity for this supposition.

Suppose a level plain with many little water-courses, each regulated by a flood-gate. Each stream is connected with the other streams. Each flood-gate is at the same level. Therefore each channel will be flowing equally full. Suppose now that we open one of the flood-gates to its fullest extent. The result will be that the one course will be a torrent and the others will be drained.

Suppose now that an impulse passes through a nerve system *A*, breaking down the resistance at the synapses.

Then the nerve system *A* becomes a wide and open channel into which any energy of other systems tends to be drained. Thus the activity of one system acts as an inhibition (by draining) of the others. Hence when I attend hard to my work I cease to hear the sound of the clock.

Similarly, if the biceps (or front muscles) of the arm are stimulated, the nerves controlling the triceps (the back muscles of the arm) are drained.

It must be remembered that this is a hypothetical explanation. Nerves are not water-courses ; nor is the nervous impulse a fluid, nor yet is it electricity. But the explanation meets the facts, and has some support.

The function of this automatic inhibition is obvious. The brain is an organ of the body. So far as the brain is an organ of mind, there is no reason why it should not attend to as many things at once as you please. But if the brain, controlling the body, were to attend to two things at once it might impel the body to simultaneous incompatible modes of activity. We may love and hate simultaneously, but we cannot take and shove away, biceps and triceps, simultaneously. No better instance could be had of the way in which our thinking is determined by space. It will be valuable for the reader to think over the remarks on the methods of psychology in the light of this instance.

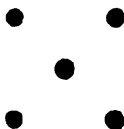
What do we mean by *one* thing? One dot. We can take in this at one glance :



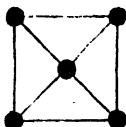
Whereas it needs several glances for :



But if we arrange the dots :



Or even join them up :



surely they are as much one thing as

5

So a hand is one thing ; a leg is one thing ; a head is one thing ; *And* a man is one thing : yet he comprises two hands, two legs, and a head ; five things. The idea of unity, one of the most fundamental in thought and in philosophic thought, is an outcome of the practical business of the brain. ONE is not a reality of the world ; it is a limitation of our actions. We can attend to five things if they are arranged in a certain way. Arranged in another way we cannot. Arranged in one way one action serves for all ; so an audience is *one*. Arranged in another way we cannot deal with all in one action. Scattered groups are many. Such is the motor basis of our ideas.

Reinforcement. We have seen how other channels are drained, but what causes the high power in the one channel. Suppose that out of a range of fifty different stimuli we decide to attend to one, what gives that one the additional force ?

It is said by some that a " Self " makes the decision,

and reinforces the one line of thought. But this, surely, is a shelving of the problem. No one would deny the existence of some animating principle in the mind and brain. But to say that this "makes a decision," "reinforces," is to beg the question. "How does this machine produce cloth?" The steam produces cloth. "What makes this wheel go round?" The Electricity goes round.

On the other hand, it is held that if a stimulus, *e.g.* the sight of a beggar, enters the mind, that excitement will spread to other areas, and that the returning energy from these areas gives the reinforcement to the original one. Whether an idea finds a response will depend on whether there are kindred systems. This will depend on the past experience of the man. This does not seem very clear. It leaves a very great deal unsaid. Why should a spreading of the idea reinforce it?

The Motor Aspect. What sort of attention have we been speaking of all this time? We have been speaking of attending to a sound, attending to a beggar, attending to dots, to a man, to an arm, a leg, a head. These are all sensations; very different from the attention involved in making a box, moving our own arms, hands, fingers.

Supposing I am making a wooden box, what am I attending to? I am innervating or sending nervous impulses down to my hands. I am receiving messages as to the movements produced in my hands. I am receiving messages of the shape, size, appearance of the wood. Up to the present we have spoken only of the last kind of attention, attention to sensations of sight, hearing, etc.

It has been said that the mere act of adjusting ourselves to see, the inclining of the body, the movement of the eyes, etc., sends back to the brain messages of information as to the movement of the muscles involved in this. These messages are forces just as any message. And perhaps these messages reinforce

the sensation. Movement certainly does "reinforce." A few turns up and down the room will often give fresh energy to a tired brain, not merely because they stimulate the circulation but because these are actual ingoing forces from those movements.

When we speak of a pencil we do not say it has two parts, its beginning and its end. We may look at it in two ways, but it is all one pencil. If someone pulls one end of the pencil, the other end moves. There is no real division.

So with sensory and motor. We speak of them as two processes. We speak of two systems of nerves. But it is all one process, one mental act. Sensory and motor are one process. Omit either and the other ceases to exist. Keep the eyes still and vision ceases. No movement or No sensation are either equally death.

What is it that comes up to the brain? A sensation; what is a sensation? In itself, nothing. It is a suggestion of an action. It is the beginning of an action. If I see a man or if I hear a sound it is the beginning of something that I might do when that object reaches me. Otherwise sensation has no meaning.

If the stimulus implies no action, it is nothing. The more action it implies, the more reality it has. And, as we saw above, if it implies two actions it is two things, and if one action covers it, it is one thing.

If the suggestion or implication of action comes in and is allowed to go on into actual response it becomes a reality. The nervous circuit is complete. To put it in terms of "sensory" and "motor," the sensation is the suggestion of a movement: the occurrence of that movement reinforces the sensation.

Attention, then, is not the selection of a certain object from the field of consciousness so as to get a closer insight into it. So long as we adopt that view, so long as we think that the mind prowls about the world like a hungry encyclopaedia seeking knowledge and "insight," we are bound to go wrong. The brain is an instrument of action, and attention is the selection

of a suggestion of action ; attention consists in the action's total or partial realisation.

The Direction of Attention. We have discussed thus far the child's power of attending to a thing without considering *what* thing. This really is the essential question : what does a child *want* to attend to ? What are his natural interests ? How can we make things interesting ? The discussion of the mechanism of attention is of importance only in so far as it bears on this question.

If we see a person attending to any object, can we say, "He is attending because . . . *X, Y, Z.*" If so, we shall be able to say, "This is *X, Y, Z*, therefore the class will attend," and again, "I shall teach *X, Y, Z* so that the class will attend." *X, Y, Z* comprise two sets of conditions. In the first place, there are certain qualities in the object itself which call for or do not call for attention ; the voice may be low, dreary, and dull ; apart from any quality of the listener's mind, attention fails to be given.

In the second place, there are Subjective conditions. Apart from external distraction or quietness I tend to hear some sounds rather than others. The sound of a fight gains immediate notice, while the equally loud rumble of a cart passes unheeded. Clearly it is nothing in the quality of the sound nor in the surrounding world that makes the difference. It is something in me. It is that I myself am sensitive to the sound of a fight, and that I am not sensitive to the sound of a cart : the sound of a cart wakes no response in me.

The Objective Conditions. What qualities in the object predispose to attention ? First, Intensity, loudness, or brightness. Thus a bright light or a crash makes every one look round. Secondly, variations in Intensity : the light in the room shines on without any one noticing it ; but if it flickers, or if it dies low, it is observed at once. The clock goes on ticking : no one thinks of it, but if it stops it is noticed. A slow

change, thirdly, gains little attention—a fading away into silence; the sudden change is what is felt. Fourthly, a small repeated stimulus is noticed. The first is not strong enough to force an entrance, but it makes a little way. The second makes a little more way. The third breaks through.

These observations have been applied to the conditions of attention in the school-room. It has been remarked that the teacher's voice should be clear, and that it should vary in tone. That lessons should vary. That the changes should be abrupt. That quiet repetition will gain attention for a point.

It is added further that the class-room should be free from din, because "intense sounds" provoking Involuntary attention are apt to distract attention, but that continuous regular sounds do not matter, such as the ticking of the clock.

These observations are, no doubt, very true. But it hardly needs psychology to tell us that classes cannot be conducted in the presence of a brass band, or that the teacher's aim in elocution is not monotony. Indeed, if psychology can contribute nothing more useful than this sort of advice we are better without it. Yearly this little crop of platitudes and fusses comes in, petty directions from the students of the mind as to what to write on the board and how to write it, how to arrange the dots in teaching Kindergarten babies their numbers. One would be inclined to think that the Psychologist has a "corner" in Mind, and that the Teachers are assumed destitute. The duty of Psychology is to go to the basis of Education, and leave the teacher who is a practical expert to work out his own details.

The above directions clearly do not do this. They do not show any fundamental doctrine of interest in Education. They do not say the child's whole nature tends in such and such a direction; in that direction education must (or must not) go. On the contrary, they assume that the education given is inherently uninteresting. One would hardly give such minute

directions as to the child's dining-room as to consider the advisability of having a clock in the room lest the child should be distracted from his food.

Such considerations in the case of the child's play-room or dining-room would be excessive. Why? Because the child has an inherent interest in play and in food. In his lessons we assume that he has not; that the room must be arranged in every possible way so as to induce him to the distasteful morsels. The teacher who offers them must offer in a certain way, and the offer must be repeated because perhaps very despair will result in a final acceptance.

If we assume that this education is distasteful to the child—book education—we assume a great truth. What has to be *taught*, what has to be put into hermetically sealed rooms is wrong; the child naturally rejects it. In what activity does the child need no teacher's inducements but learns of his own free will and clamours for information? What is it that the child will learn equally in the sunless back street or the open meadow? When we have found that, we have found the answer to what education should be.

The Subjective Conditions. Read a book about motor cars, and then walk down the street; you will be surprised to see what a number of motor shops, motor advertisements, and motor cars there are. If you hear it said that green is mankind's favourite colour, you will be surprised at the number of green objects you see in the course of the day. Why is this? Because the original thought of green lowered the resistance of certain synapses, so that you were more ready to perceive green than red. Each new perception of green increased this tendency.

Inherent inclination to attend depends then on the formation of paths in the brain by the lowering of the resistance of Synapses. This lowering may be due to various causes. Thus the man who has been thinking of Green has an acquired inclination. It is only a very passing inclination: the path soon fades.

On the contrary the inclination to attend to print, to French, to Science, to bicycle bells is one of long standing. It may be dignified by the name of a Habit of Attention.

Some inclinations to attention are not acquired; they are born in the child. The inclination to attend to bicycle bells or books is the result of repeated experiences; if the child had been born in a country where there are no bicycles or books, he would not have possessed that inclination. But the inclination to attend to a fight is inborn. If the child had been born in a country where there were no fights, he would still have the tendency.

Inclinations then are (1) Acquired, (2) Inherited.

The acquired are (a) Temporary habits, (b) Long-standing habits.

The inherited inclinations may be derived from the near ancestry or the remote ancestry of the child. By near ancestry is meant the father, mother, grandfather. Thus the son of an architect may perhaps have an inclination to be artistic derived from his near ancestry.

By inheritance from Remote Ancestry is meant the inheritance of racial traits. We have certain inclinations because we come of the stock of mankind. Thus there is born in every child in greater or less degree an inclination to attend with painful intensity to a sound behind in the dark. The physiological meaning of this is that certain very remote predecessors of ours formed low resistance systems to certain stimuli. Or rather all those who did not form low resistance systems to certain stimuli, *e.g.* a sound behind in the dark, failed to survive.

Thus our inclinations to attend depend

In the first place on The general tendency of mankind.

In the second place on The particular tendencies of our stock (which is in some way different from mankind).

In the third place on The particular differences of ourselves from our own stock due to the formation of habits.

The Interests of the Child. To what is the child by nature inclined to attend? This will depend upon his inborn low-resistance systems. An inherent inclination to attend to fights is called an Instinct. But an instinct is more than that. An instinct is an inherent tendency to fight, *i.e.* to do something.

There are instincts of Flight, of Feeding, of Sex, of Construction. These are not tendencies to be interested in certain things alone. They are tendencies to do certain acts. We are interested in things as being possible occasions of such acts. Thus food is of interest because it connects with an instinct, *i.e.* because it supplies an opportunity for the possessor of that instinct to do something.

It is clear, then, that what we are instinctively disposed to observe is not objects, but opportunities for action.

In fact, this brings us back to precisely what was said above under the heading of "The Mechanism of Attention." The world which is presented to the mind is not a world of objects at all. It is not like a picture on a photographic plate. It is a world of possible actions. It is interesting just in so far as it calls on us to act, and in particular in so far as it calls on us to do actions which we are disposed to do.

One sees the puniness and futility of discussions of how a schoolmaster should speak, and whether the class-room should be near the road. The child is being interested just in so far as the lesson is teaching him to do something. It does not matter what it is so long as it is doing, whether it is fighting, or digging, or cooking, or making. Just according to the nearness of the lesson to action so will it be interesting. The story of a fight, or the description of a piece of machinery is better than nothing, better than bald lists of names

or wordy arguments. But the fight itself is most interesting, or the making.

Making and doing is what the child will do without a teacher equally in the meadow or the sunless street. He is crying out for chances to do things. The schools for more than half of his time prevent him doing things. They make him sit still in a desk. Either that hunger of doing is a healthy tendency or else it is not. Perhaps the schools are doing right; perhaps they are doing a most grievous wrong.

Clearly the child's fullest opportunities for doing will be found in the external world, in a free, Rousseau life outside the school. There he can fight and make far more than in the most perfectly organised school. But Rousseau's ideal of Education is certainly not wholly correct. "*No education*" seems to be retrogressive.

Start, then, from No Education, and consider why do we have to restrain the child's natural interests? Just how far do we have to restrain them?

The Evolution of Attention. We must not look upon instincts as little bombs inside our minds ready to go off at the slightest touch upon the appropriate spot. An instinct is not a force in itself: it is a channel through which force may flow. The fighting instinct is a channel worn by long ages of fighting, and through it our energies tend to escape.

It will be clear, then, that all the instincts, whatever they are, are merely different channels helping the main direction of the stream. They are merely different courses by which the great wide stream goes on in its one same direction. So the instincts are all different channels through which the life impulse flows out for the same broad purpose. What is that purpose?

Obviously the purpose is existence. Fight, Food, Flight, are all secondary purposes of this. The piece of food, the weapon of offence, are tools for achieving the large purpose. Everything is of interest in so far as it is a tool for this large purpose, in so far as we see in it the means of an action to this end. Every occasion

is of interest in so far as it is the presentation of an opportunity for action to this end, to exist, to go on living.

Direct Attention. The animals' interests are food, fight, sex. Such objects as a knife for cutting up food, a club for use in fight are of no interest to him. He is interested only in the objects directly conducive to the act, without any intermediary process. The animal cannot see how a bit of shaped iron can have any bearing on food ; for it is not eatable.

The Primitive man uses natural weapons. Hence he is capable of seeing interest at first remove. He can see the application of a large lump of wood to the instinct of fighting. But he cannot see the secondary bearing of the sharp piece of flint to the shaping of the large piece of wood for fighting.

A higher stage is reached when tools are used for making weapons, and again tools for making tools for making weapons. So the process continues until one reaches the almost infinitely complicated process of a modern manufactory where a single act, through thousands of intermediate processes and results, may bear on some end so distant in time and space, so distantly relative that the connection is almost incomprehensible.

The first great development of the child's mind is in the relativity of interest. A child is what H. G. Wells calls a "Gawdsaker": his attitude is "For Gawd sake let's do something." Provide a boy with wood and with tools, and tell him to make a box ; he goes at the task headlong ; he works for the moment ; he makes one side without considering the sides yet to come. Why ? Because he lacks the power of relative thought. He cannot work out This for That for That, for That, and so THAT. He lacks Indirect Attention.

This is not a mere accident of the child's mind which can be cured by one hour's carpentry per week, taught by an external master. It is the fundamental weakness

of his mind. The mastering of it is education just as much as the power to use tools is Civilisation. These two powers are of equal relative importance; that is to say the most important thing of all—the essence of the whole matter.

Indirect Motives of Acts. The Primitive man who is running after a beast so as to get food is doing something of direct interest. He is doing it for a definite end for himself. But where the wife makes him a skin-garment because he will be pleased and will give her more food, here there is a distinct corner in the argument. It is doing something for someone else so that he may do something for you. And that something is very far removed from the something else: a bearskin coat brings food; a gold necklace brings arrows.

Introduce money and the process becomes still more complicated. Here we have an object of no inherent value, but representing generalised value, the value of any individual's work, the value of any work. And this value is transferable.

The argument involved in a child's buying a penny-worth of sweets is extremely involved: I give you a certain amount of my work in exchange for an amount of your work equal in value. The work is not really my work; it is part of my father's work given to me. The argument is involved because the penny very conveniently solves an extremely involved process.

So with the child's work. He cannot perceive the extremely complicated arguments for which he should work. He cannot foresee the bearing of his present study on a future examination which has value in admitting him to a certain school, which has value as giving him a chance for a special scholarship, which has value as admitting him to the University cheaply, etc. Hence a spurious system of values is invented. He works for marks, and marks are exchanged for half-holidays. This covers up the whole process, just

as does the penny. If there were no pennies, we should all be first-rate economic thinkers.

Just as the boy cannot see how one thing is a tool to another and find interest in it in virtue of its relativity, so he cannot see how one act is of value for the sake of another, and do the act for its relative interest.

That is what we have to teach.

Is it being taught? The reply must be No. Children are not being taught to do. And where they are taught to do, they are guided. Instead of having to think out each consecutive step and its bearing, they are told, "Take a piece of wood $4\frac{1}{2}$ " by $3\frac{1}{4}$," as if the value lay in the final box. The mere fact of teaching children is depriving them of an education. This is no mere plea for a greater suppression of the teacher. That plea has been made a hundred times and unavailingly. The plea is that we should give up teaching altogether. Teaching implies that the substance of education is knowledge; and that the child does not want to learn.

The substance of education is doing. A child wants to do. The value lies in his power of planning to do—just the very place where Teaching interferes and tells how. The duty of the Developer of Childhood is to supply problems, to supply materials for solving them, and to criticise results. His aim is to teach the child to think relatively for action.

The Pathology of Attention. There is a good deal of truth in the statement that all mental disease is disease of attention. The larger part of insanity takes its rise in misdirection of attention, just as the real essence of education is correct direction of attention.

The diseases of attention take four main forms.

In atrophy of voluntary attention the power of directing attention is lost. The mind of the patient is like the mind of an animal turned aside to every stimulus. The attention of the infant or of the feeble-minded individual is of this kind. It is merely a lack of development, that power of prevision for

action which, as we have said, distinguishes the adult from the child and the higher from the lower race. It is due to physical causes, lack or error of development. It is treated best by manual labour—the present method of the school for defective children—but that manual labour should be the evolution of the child, not a following of teacher's directions.

Inattention, as in melancholia and Dementia Praecox, is a very different matter. It is an inward absorption of attention, so that the thought is drawn away from the external world altogether. The child is so absorbed in a subjective imaginary life that the stimuli of the real world fail to reach him. Thought and reality drift further and further apart until thoughts are externalised as illusions, and there is no touchstone of reality to dispel them. The condition is one of thought divorced from life, that is to say, of thought divorced from the needs of action. It is a condition produced in less or more degree in at least fifty per cent. of highly educated boys and girls.

Too often the merely intellectually successful product of the University judged by the standard of the complete mental stability of a man of action, is unsound. His unpracticalness, his power of thinking without concrete object, his power of absorbing knowledge which does not concern him, his bluntness to the stimuli of the world, his incapability, his inefficiency in adapting means to end in sequences of practical relative thought, are all symptoms of mental perversion, if not, mental disease.

Lastly, there is a pathological condition of attention known as Monideism. Physiologically this is a case of a system of extreme low resistance, so that every stimulus tends to pass out in that direction. In Arithmomania everything is thought of in the mathematical aspect—and counted. This occurs frequently in normal individuals in a temporary form as a tendency to be kept awake by mental calculations in bed after a hard-day's figure-work. Any deep impression may

become a monomania, for example, a severe shock or fright, a disappointment, etc.

Every man is in a sense a monomaniac. He has one great "low resistance system" which governs the course of all his thoughts, one final ambition to which all vexed questions are ultimately referred. This monomania may be a religious impulse, a personal ideal, an altruistic tendency; or it may be a selfish desire, a purely sensual motive. This acts as the hub of life. Life tends to flow out towards this predominating ambition. It is the core of character.

The idealist, the sensualist, and the monomaniac are one. The only difference lies in this, that the mind of the monomaniac is so divorced from reality that there is nothing to prevent it swinging round in uncontrollable circles of meaninglessness. There is no objective call to prove to the poor James Smith that his son is not dead, or to the Fakir that his head is not surrounded with light.

Whenever the present system of purely intellectual education is wholly successful it produces a subjective of this kind, a man in whom thoughts and action are separated. The subjective from the point of view of evolution is useless flotsam. We would not exclude ideals, higher thoughts, religion, art, poetry, from life. But such things are of value only in relation to life. Religion and insanity lie very close. In relation to the life of practical needs it is religion: out of relation it is insanity. So with the rest. It is not the inspiration of life that is at fault: the fault is that the inspiration of life is taught out of relation to life, so that it gets mistaken for life itself.

CHAPTER VII.

SENSATION AND PERCEPTION.

The Philosophic Problem. If sight, sound, smell, taste, touch, and every other sensation be eliminated, what remains of the world? If we cannot smell, nor see, nor taste, nor touch the orange; if it has neither weight nor solidity for us, is it possible to say that it exists at all? We have no knowledge of the world apart from sensation. The world is a mixture of sensations, just as a dream is a mixture of sensations. The supposition of any external cause is a mere assumption, unprovable. There is "I" who feel, and there is "me," the sensations felt, which make up the "I." The supposal of an external alien substance is a separation of I and Me. It externalises sensations. What justification is there for this?

This is a very nice little question, capable of endless argument. It is valuable because it makes one realise one's relation to the world. It makes one realise that we do not know how near our perceptions are to reality: whether they are really representative of reality at all. Why should they be? All that we need to know of reality is just sufficient to react to it. How far do these sensations represent the world? Probably not at all. They represent what we have got to do.

It is interesting from another point of view as exemplifying a fallacy. Eliminate sensation from the world, and the world ceases to have reality. But can

one eliminate external sensation without denying one's own existence ?

Let us remember that sensations are not photographs of the world, representations from an impersonal point of view, but merely stimuli, representations not of the Thing but of what we have to do to it. This is the more correct view. And when one bears it in mind the argument above ceases to have any meaning. If one denies sensation, one denies action. Deny action, deny any movement, and surely you have denied the existence of life, if not of matter also. In fact, the argument becomes: "If we suppose that nothing exists, what proof is there that it does exist ?"

It is this view of sensation which we must avoid—the view that supposes the mind a photographic plate, the eyes as lenses making a record of facts ; the mind as a phonographic cylinder, and the ears making a record of facts. Whereas we should think rather of the Senses and the Mind as a gun with a string on to the trigger. The string is the Senses. Sensation is not the image of the Poacher's leg, but the pulling of the string. Only there are many ways in which the gun may be fired off ; the warmth of the Poacher's body, the light vibrations from him, the sound vibrations, all these may fire the gun. Not only that, there are many things that the gun may do. One form of stimulus will pull one string and one another. The light and sound vibrations of the keeper pull a string which makes it get politely out of the way. The gun calls the pulling of that string and the response "The Keeper." Its idea of Keeper is "Something that I get politely out of the way of."

Let us remember, then, that the senses are only part of a process, and are quite meaningless without the other part. They are simply the pulling of a string. What is the use of the engine without the string to start it ? And what is the use of the string without the engine to start ?

Sensation and Adaptation. There are two aspects

of adaptation ; the action itself, and the stimulus to the action. Sensation clearly falls under the second head. The acts must be correctly joined up with the external world. This is the function of sensation. If sensation is accurate the joining will be correctly and efficiently made ; any given external change will evoke an appropriate response. But where a child crossing the street sees objects as further off than they actually are, and begins to run away too late, here the action is correct, but the connection is badly made. In the case of the blind, colour-blind, or deaf child, connections are actually missing. In the case of illusions connections are wrongly made.

The Study of the Sense Organs. It is extremely important that the teacher should have at least a rudimentary knowledge of the sense organs, the eyes, ear, nose, tongue, sense organs of the skin, semicircular canals. Such knowledge cannot be obtained merely from books. The teacher's best plan will be to gain from an elementary text-book a general idea of the principle of the particular organ. He might then, with the aid of a model, gain a general idea of the construction. After that he should not fail to study the organ itself, if possible human, otherwise animal. The best method of study is to watch the dissection of the organ by a medical friend. The student might then endeavour to make a simple dissection himself in order to assure himself of the structure.

Students of education should remember in studying hygiene that they are not doctors, nor will it ever be their place to usurp the doctor's functions. The two duties of the schoolmaster are

1. The prevention of disease, chiefly by the instigation of effort on the part of the children.
2. The early recognition of disease, so that the doctor may be called in in the curable stages before serious damage is done.

The schoolmaster's knowledge of anatomy should, therefore, be only such as to render intelligible his

study in hygiene and pathology. In hygiene he should study what precautions any child can take and should be taught to take, so as to avoid the limitations of his activities imposed by disease. At the same time the teacher should make certain that he himself is not encouraging the children to unhygienic practices which a little forethought on his part could have avoided.

It is not sufficient to teach hygiene to children : it is further necessary to let the children be hygienic. In some cases they are actually compelled to act in defiance of their knowledge. In other cases, even more, they are given no opportunity of applying their knowledge. They are taught to be clean in an anti-septic dwelling where their untidiness and messes are cleared up after them. This is merely to encourage that frequent combination effected by education-talkativeness combined with helplessness.

Secondly, the schoolmaster should be acquainted with the pathological side. It is not his duty to cure nor to know what the cure is. His duty is to recognise. It is, therefore, best to study this branch of the subject from the aspect of the symptoms. Take any symptom, *e.g.* discharge from the ear : what does it mean ? Secondly, what does it lead to ? Is it a case for calling in the doctor, or is it a case where first-aid will suffice ?

First-aid should be known by the schoolmaster—and more than that, by the children. But the schoolmaster's first-aid should be somewhat modified. It is not probable that he will have to deal with a case of acute alcoholism. Greater emphasis might be laid on the troubles of specially frequent occurrence in the school. The boy may be given a full course. But the teacher should, with regard to himself, specialise more on his own sphere.

In the teaching of the first-aid course, it will not always be advisable to call in the assistance of a doctor as lecturer, even if his services are provided free. In

many, one might say in most cases, the doctor tends to be far too technical. It offends his professional instincts that anyone should treat a fractured arm without knowing the names of the bones of the arm. The unprofessional practical man knows just how much he can do, and just how much he needs to know.

The teacher should pay particular attention to the symptoms of disease in the eye and ear. In both of these cases the approach of disorder is easily recognisable in the earliest stages. And it is of the greatest importance to recognise the trouble early. Let the teacher remember this above all—not to be too sympathetic towards sick children. Very often children who are ill are found to adopt an attitude of self-importance as if they had done something clever. Children will be unable to hear, be short-sighted, etc., just for the sake of the self-importance attached to ailment.

The more the teacher lays the matter of hygiene in the hands of the child, and treats disease as a crime and a blunder, the healthier the school will be both in body and mind.

Perception. Assuming that the sense organs are organically perfect all persons will see and hear, etc., equally well. The sense organs are automatic recipients of physical stimuli. Assuming the absence of any tangible defects, all photographic lenses will give the same picture, all phonographic diaphragms will make the same record.

Thus putting aside sense organ defects in any one situation, all minds will receive the same quality and quantity of sensations. How then do we account for the fable of "Eyes and No Eyes."

An infant receives practically pure sensations, a "buzzing confusion." Perception is the process whereby he selects and obtains meaning from that confusion.

Look at a picture upside down : you have there the "buzzing confusion of sensations" of which Professor James speaks.

An attitude of effort or "conation" develops towards this heap of stimuli.

Certain of the stimuli are grouped together so that the picture seems to fall into parts, these parts having a unity. In fact, out of a heap of stimuli action-groups have been selected, *i.e.* stimuli representing one unit of reaction, or such a group as can be dealt with in one response.

The difference between sensation and perception is then simply a difference of degree. Perception is a selected stimulus or suggestion on its way to action, but not yet realised in actual response.

Perception differs again from the complete realisation of a stimulus. There is a small irritant in my throat. A sensory message goes to the brain and evokes a motor response—a cough. Every moment we respond to things without consciousness. At this moment internal glands of which I know nothing are making responses to stimuli of which I am equally ignorant. The word Perception is usually employed in a way that implies consciousness. Wherein, then, does perception differ from automatic response?

It differs just in this, that it is not a complete response. The stimulus to cough is unconscious just because it passes out immediately into action. The perception is conscious just because that process is somewhere cut across, because there is a pause which enables us to catch a glimpse before it happens. In that pause is consciousness. And the stimulus, instead of, as in the case of the cough, passing out immediately into one inevitable reaction, may pass out into one of very many alternatives which we have time to see and choose.

Sense Training. The fable of "Eyes and no Eyes" illustrates the fact that some people perceive more than others. The fable is as follows: Two boys go out for a walk: when they return the teacher asks each what he has seen during his outing. One boy gives a long account of insects, birds, flowers, streams,

fish, fields, grain. The other apparently has seen nothing.

The moral of the fable is that children should "observe." And for that purpose we should train the children's senses, for they are the organs of observation.

Clearly both of the boys actually *saw* the same number of things. Move two cameras along side by side, and each lens will record almost identically the same series of impressions.

But in the one case those impressions were attended to ; and in the other case they were not.

Attention means partial realisation in action or Doing.

The selection of what receives attention depends on what we are inclined by nature or by habit to *do*. We attend to occasions of action.

If, therefore, I have a predisposition to fight, I shall attend to occasions of fighting. As I pass down the street a pair of boxing gloves in a shop-window will not fail to catch my notice. If I have a habit of smoking (also an act), tobacco and pipes will be observed. If I am hungry, food will be perceived. If I am a carpenter, the furniture in a room will strike my notice. If I am an outfitter or tailor, I shall no doubt perceive a guest's dress—or if I am a careful dresser myself. If I am a farmer, I shall notice the crops and the state of the fields in my walk ; I shall notice the weather in so far as it influences crops ; I shall notice field mice and locusts as being enemies of the crops. To a mere stock farmer these things will pass by unperceived. The grass, the cattle, its state, animal pests, signs of favourable weather for the cattle will occupy him. In fact, each man notices what bears on his action, and, if he is properly organised for action, nothing else. Briefly, the more a man does the more he sees, and *what* he does he sees.

Now as to Eyes and No Eyes. If Eyes perceived all these things in his walk, we must either suppose

that he was a stock farmer, a crop farmer, a forester, a sportsman, a hydraulic engineer, a miner, an astronomer, a sailor, and a dozen other professions as well, or else we must suppose that he was one of those useless dilettantes without a profession, and without any direction to their thoughts.

With regard to the moral of the story, we would point out that no amount of training will make the lens of a camera transmit more light than it does, that no amount of sense training will alter the physical and chemical laws which govern the action of the eye.

But the "training of the child's senses" in order to make him an "Eyes," a perceiver of nature, an observer of the world around him, is in direct opposition to the most fundamental tendencies of his mind, which are to select what bears upon his lines of action. Such a training, if successful, teaches the child to perceive apart from action. It turns a thing of action and purpose into an aimless cinematograph camera.

Observation is only from an attitude. That attitude depends on one's lines of action. Observation can only have meaning when there is such an attitude, for meaning lies not in what we see, but in what we are prepared to do with it. Nature-study and Observation Lessons have no such attitude. They assume what is most fundamentally wrong, that it is the child's duty to observe everything in his environment. An English School Inspector tested the intelligence of children by holding up two or three pennies rapidly and asking, "What had I in my hands?" For what reason should the child observe such a thing?

The teacher should make this the test of every lesson he is about to give—"The child is a doer. What does this lesson help him to do?"

Drawing as Teaching Observation The place of action in observation has partly been realised in the schools in connection with the Herbartian steps. But the last Herbartian step, "Application," is vague in its meaning. It may mean the application of a general

law to a particular instance, or it may mean the formation of generalised knowledge for practical life.

The Herbartian philosophy asserts that the aim of education is the acquisition of ideas. The Herbartian lesson starts with Preparation, the calling up of ideas, which also evokes a thirst for more. It continues with Presentation of ideas. These ideas are digested in Comparison and Generalisation. Application seems really like a further process of generalisation, a consolidation of the generalisation, *e.g.* by testing it. It is certainly not the aim of the whole lesson unit.

In consideration of man's purpose in life as action and not as knowledge, surely Application is the aim of the lesson unit, and it is the first step. The beginning of every desire to learn is a desire to do, and natural learning is in order to do.

Take the simple case of drawing a flower as the Application of a nature-study lesson. The drawing of the flower to the child is the real aim of the lesson. Is it necessary to learn nature-study in order to draw? A smattering might be of use as confirming one's observations, but anything detailed is unquestionably useless for the purpose. Certainly the kind of nature-study learned in the Kindergarten is not the most useful kind for enabling one to draw a flower, any more than a doctor's physiology is of any use for sketching the nude.

Is drawing a legitimate aim for a lesson? For a drawing lesson, undoubtedly yes. But for a science or nature-study lesson? We cannot suppose that a farmer learns agriculture in order to draw fields. Nor that a horticulturist learns Mendelism in order to draw sweet-peas. Drawing is action. But the proper application of knowledge is the action on which that knowledge bears. The study of plants finds its proper application in the growing of plants. We learn about plants in order to grow them, and we grow them for food perhaps, or decoration.

This drawing of objects assumes that the object

itself has a material reality and meaning apart from its bearing on our lives, apart from the actions it connotes. It assumes that we are learning flowers as things, not how to deal with flowers, and that, therefore, a practical application of the lesson is to realise not the action but the thing.

On this basis of learning things instead of learning actions, we have divided our curriculum, as it were, with a knife and a shovel. We have put seas into geography but water into science. We have sorted the universe into heaps of concrete objects, forgetting that the universe so far as we are concerned is nothing except for our activities. The proper division of the curriculum is according to the activities of man—food, clothing, building, leisure, religion, art—not according to an arbitrary and obsolete demarcation of the concrete universe of space.

What is the aim of drawing? It is either the expression of a spatial idea, as when I think of a design for a box and record the visual image on paper for permanency. This is mechanical or technical drawing.

Or else it is the expression of an aesthetic emotion. In ordinary cases I approach an object thinking what shall I do with it. In certain cases the appearance of the object gives me pleasure. I continue the pleasure by prolonging the stimulus, viz. by making a replica of the stimulus. In this replica I embody a good deal of the pleasurable emotion. Thus the stimulus runs out into emotion, and for the sake of emotion into action.

Thus the training of observation by means of drawing looks very like a faculty error. "O"bservation is a faculty. To Observe a flower by the river's brim, to Observe how an engine works is all the same faculty. Stimulate the Faculty of Observation and the child will observe everything, including what he wants and a good deal he does not want. It is a pernicious doctrine which is vitiating the junior science teaching of our schools. It is making the most valuable part

of the child's preparation for a life of experienced and knowing action an idle messing with ill-chosen specimens, and the encouragement of a purposeless dilettantism.

The Right Object Lesson. The right object lesson should start with a definite invitation to make or do. "Drive a motor car," "Grow a flower." It supplies the knowledge for that purpose. Or rather indicates where the knowledge may be obtained, and leaves it to the child's own impetus to obtain it. Finally the child applies that knowledge and acquires the skill.

The final result is a number of applied facts grouped round and bearing upon an act of skill, the act of skill having been the ultimate motive. This is the ideal of knowledge, a part of action.

CHAPTER VIII.

MEMORY.

Perception and Memory. If I look now at the object I am holding in my right hand, I *perceive* a pen. If in an hour's time, when I am out on my "constitutional," I recall this moment, I then call to mind again the idea of a pen. I have to all intents the same image, the same ideas, but there is no objective reality. There is no actual pen in my hand that I am looking at. This is no longer a preception ; it is a memory.

The Sensory Element in Memory. In perceiving the pen I received certain sensory stimuli. These were mainly stimuli of sight. If I ask myself what colour was the pen ? I can reply Black. Therefore there are colours in my memory. It is a concrete memory, for I can answer the question, "Suppose the pen were cut in half, what would the inside look like ?" Thus the sensations of memory are little less intense than those of actual sensation. Only, if I put my pen on paper I could easily run a pencil round the edge. But it would be difficult to do this with my memory image of the pen. It is too hazy and evanescent.

Individual Differences in the Visual Memory. Think for a moment of those wooden blocks which decorate the art-room of every school. Think of a six-sided solid. Now try to answer this question : Suppose you cut a six-sided solid across parallel with the table,

what shape would the middle be? Second, suppose it were cut slantwise from top to side?

Now examine your own state of mind:

1. Did you see the figure as a solid?
2. Was it a definite colour?
3. Did it remain steady?
4. Can you see the reply to the above questions quite clearly? Or did you reason out the reply?

Hardly two people will answer exactly alike to these questions. Perhaps you can mentally dissect the figures as easily as if they were real. Personally I cannot do so. I can see the figure clearly: it is definitely white outside. It cuts very nicely, and leaves a smooth shiny yellow inside. But I cannot make up my mind as to the shape of that inside.

The Physiological Explanation of Imagery. The mind has the power of reviving past sensations when the object which originally excited the sensation is no longer present. In the case of actual sight the disturbance passes from the eyes to the brain. In the case of memory the disturbance passes from some thought, *e.g.* the germane thought of pencil to the thought of pen re-exciting the area excited originally from the eyes. The excitant is not a visual stimulus, but a transference of energy from another nerve group. In the same way the sound of a "meeyow!" may call up the visual memory of a cat. Here an auditory impression arouses the visual memory. Or, again, the auditory memory of the "meeyow!" might awake the visual memory of the cat.

Just because the stimulus does not come direct from the sense organ, it is weaker and fainter. Because it lacks the concomitant sensations of the adjustment of the sense organ, the focussing of the eyes from a long distance, the turning of the head, therefore it is without external localisation. It is a faint image without a habitation.

Added to this is a strange unanalysable sensation

of Pastness. It is something which has happened before.

The Memory Images of other Senses. Think of the reply to the question, "What sort of a noise does a dog make when tied up?" Did you hear the sound quite distinctly? Was there a visual image as well as the sound? Was there any tightening of the muscles in the throat while you thought of the sound?

Not only may we have revived sensations of sight, but also of hearing. Only, those of hearing are far less common. In fact, many people have no auditory imagery (or memories) at all, whereas more than two-thirds of adults and practically all children have some sort of visual memory. Very often memories of the sensations of muscular contractions in the throat are mistaken for auditory memory. Think of a very high note, and you will very likely find a distinct feeling of tenseness in your throat. Only if you think of some sound which the human voice cannot imitate at all will you really discover whether you have auditory imagery or no.

The thought of the smell of a cigar shows olfactory imagery. The thought of the taste of quinine shows gustatory imagery. The thought of the prick of a needle, of the cold point of a pencil, shows the imagery of the sense organs of the skin. "What does rusty iron feel like?" evokes a very complex tactual image.

"I pulled the trigger: it stuck: I jumped over the cliff. . . ." Here we have muscular imagery. When I make a movement with my finger I have sensations from the muscles and joints of the finger telling me that the movement has taken place. When I think of this movement I have *imagery* of these sensations. Jumping over the precipice involves, besides muscular memory, memory of the sensation of falling. This sensation is given by a small organ in the inner ear. Think of going up and down in a lift, and you will have memory of the sensations of the inner ear. Or

remember spinning round rapidly and the resulting giddiness.

Thus there may be memory images of any sensation. But the power of calling up such images varies very considerably in different people. For example, some people excel in, and many are utterly deficient in, auditory memory.

The Teacher's Attitude to Individual Differences in Sensory Memory. If in expounding a proposition of geometry the teacher says, "Think of the figure," but does not draw the figure upon the blackboard, he is asking for visual imagery.

So again I have observed teachers, particularly women teachers, asking children to "imagine what the whole scene was like" in history: "think of the colours of the dresses, the light," and so on. I recollect myself being told as a child to put my hands in front of my eyes and try to imagine the scene at the Feast at Cana of Galilee.

On the other hand, one reads in text-books of Psychology that the teacher must not demand visual memory from the children because some may be deficient in it: their memory may be auditory. To tell the auditory type to try to remember "where it was on the page," or to learn off the shape and colouring of a map is to ask them to do a psychological impossibility.

These are two extreme views. One suspects that neither is fully right. The demand of the female teacher was plainly preposterous. Few children would be of so extreme a visualist type, and still less would have their imagery under such control as to be able to fulfil the command.

On the other hand, the differences in sensory imagery are not nearly so great as the second view would lead one to suppose. Pure auditories are extremely rare, and many of those who declare themselves such are merely bad introspectionists. The teacher is asked to alter his teaching, indeed to alter the whole caste of his mind for the sake of a doubtful minority.

As in the case of Fatigue, so here. If the knowledge of one's type of imagery and of the best method of employing it is of value to the schoolmaster surely it is also of value to the child. If it is of value in teaching, it must also be of value in learning. Why, then, keep it as an esoteric doctrine? Why not teach it to the child? Do not teach psychology: that is unnecessary. But let the child know that some people remember things purely by eye, and if they are of this kind give them the tip to make a difficult battle into a diagram or series of diagrams, to use number forms, to recall the position of facts on the page, and in every way to take advantage of their individual mental construction.

Conversely with the opposite case: let the auditory use his gift.

Such teaching is not command: it is advice. If it is of value, the giver may feel sure it will be appreciated. Believe me, the child has far more motive in learning his lessons than we have in teaching them. Unfortunately schoolmasters suffer no detention or corporal punishment for bad teaching as does the child for bad learning. Consequently the child is only too glad of any assistance which will enable him to do his work more efficiently and at less cost of effort.

In short, the schoolmaster's duty is not to fill children's minds: it is to teach them how to learn.

The Idea. Thus far we have spoken of the retention of sensations only. Is the memory of a pen merely a complex of recalled sensations? Certainly not. Is the perception of pen merely a receiving of sensations? We saw that it is not. It was a receiving of sensations *and* a giving of meaning to those sensations. For a sensation is only half the mental process. It has reality only when it passes into a motor response. So with perception: the sensations gain meaning by evoking a motor correlative. In other words, the incoming message or stimulus awakes the beginnings of its outgoing response. That is perception. So with memory:

the memory of a thing is not merely a memory of sensations but also of an attitude, the beginnings of response to those sensations. This memory unit is called an idea; it is the restitution of a previous mental state of readiness to respond.

Association of Ideas. We know that in life one idea, or memory unit, is followed by other ideas. I think of the "house where I was born," and a cloud of memories cluster round me. I think of an isosceles triangle, and one idea follows another in an orderly sequence known as the Fifth Proposition. This tendency of one idea to follow another is called the Association of Ideas.

This term "Association of Ideas" has been of great importance in Education since the days of Herbart. Herbart believed that the aim of education was a store of well-arranged ideas. We are beginning to see that this ideal is not a complete nor yet a true ideal. But, assuming that the aim of education is Knowledge or Ideas, it is obvious that the association of ideas will be of very great importance.

For we may, perhaps, discover Laws of Association. Given any idea, what ideas will follow it? In other words, "How do ideas naturally arrange themselves in the mind? How ought they to be arranged? In what order shall we put these ideas which constitute knowledge the aim of education?"

Suppose, however, that we deny that mere knowledge is the aim of education; if we say that action is the aim of education and that knowledge exists for it, the same problem still applies. Ideas are still needed. How are ideas arranged and linked in the mind?

The Physiology of Association. An idea is the excitement of a system of neurones. In the idea of a pen these are mainly neurones of the visual area plus certain motor systems. If, then, a system of neurones *A* is excited, why should *B* follow? Because *B* has followed before.

How is it that following in the past is a reason for following in the future? I think of *A*—that is, I excite system *A*. Then by an external cause system *B* is excited. The energy of system *A* is then transferred to system *B*. The energy must go by some definite route. Thus the transference involves the formation of a path of low resistance from *A* to *B*. So, in the future when system *A* is excited, the excitement will tend to spread, and it will tend to spread most easily along the path of low resistance to *B*.

The formation of a path seems to act only in one direction. Transference of excitement from *A* to *B* forms a path from *A* to *B*, but it does not form a path (or only to a very small extent) in the opposite direction. Hence, when I transfer my attention from "The" to "Boy," to "Stood," to "on," to "the," to "burning," to "deck," I have paths which will lead me to repeat—"The boy stood on the burning deck," but I have not paths which will lead my thought in the opposite direction—

"Deck burning the on stood boy the."

This is called the Law of Forward Connection.

General Training of Memory. It will be plain from the explanation given so far that memory is not a special department of the mind. The formation of a memory is the formation of certain neural connections. The formation of these connections does not in any way affect the mind as a whole, nor does it assist in the formation of other connections. It does not even assist (or very little) in forming *the same connection backwards*.

To put this into everyday language: Learning one thing is learning one thing. It does not help one to learn another. Learning poetry is learning poetry, and it is not the smallest help towards learning figures, or learning names of people, or remembering one's partners at a dance. All learning is specific.

Therefore if a thing has value in itself, like the market quotations or the multiplication tables, learn it. But

if it has not value in itself—like many of the pieces of poetry learned by children—then do not learn it, for it is of no value at all : it does not help you to learn anything else.

There is no short cut to mental efficiency. You cannot give your mind a course of Sandow exercises which will make it effective for any sort of memory work. You can only learn your work by learning, by learning the actual things you want to learn.

The Selection of Successors. Every group of neurones must have many paths of connection. What will determine the one path by which the nervous excitement will spread ? Only the lowness of the resistance. The easiest path will naturally be selected. The lowness of the resistance of the synapses depends on the frequency, recency, and intensity of the stimuli which have passed it.

It will depend also to a certain extent on the general set of the mind at the moment. The idea Blue might have the alternative paths Cloth or Sea. If the subject of thought has been a new dress, the path to " Cloth " has the better chance. In other words, the ideas which bear on the present point of interest are selected.

Kinds of Association. There used to be a classification of Associations, by Cause, by Contiguity, by Part-Whole. Consider these in the light of Physiological theory, and they will be reduced to two. If two mental states follow each other in time as described above, a path of association will be formed—association by Temporal Contiguity. If two neural systems are partly identical, there is no necessity for a path ; the excitement will spread from one to the other by means of the common element.

Types of Mind. There are some minds in which associations are many. Everything is joined with everything else. Anything may be thought of in any connection and from any aspect. Ideas may be few, but they are joined with a perfect network of cross-connections.

There are other minds stuffed full of ideas, each idea hanging by only one or two threads to the next. This type knows everything, but never evolves an original combination, a new thought. It can bring out all its long-threaded classified necklace of knowledge, but it never makes a new connection.

The first may be an ignoramus. But though the ideas are few they are linked in every possible way; hence some day steel gets joined into the idea of writing, and hence comes the idea of a steel-pen which no one had thought of before. Everyone else knew both those ideas—but they did not associate them.

There is a place for both kinds of mind in the world. Of course the combination is the ideal, but like all ideals it is rare. On the whole the schoolmaster should aim rather at originality, at many connections. Books of reference have largely come to take the place of the encyclopaedic memory. Printing is cheap: the scholar of the olden days was merely an inexpensive form of reference library. Nowadays, in most professions, thought and originality are needed. If mere memory counts for anything, the men who exhibit their marvellous powers on the music-hall stage ought to be made Prime Ministers. The only real use of mere memory without much thought, is for passing examinations. Examiners, of course, say that they want thought. Some do. But most when they say they want thought mean that they want their own thoughts given back to them rather better worked out than they were before. But passing examinations is, as everybody knows, a rather useless performance, especially if carried to excess. Examinations, at any rate, do not seem to be much criterion of who will succeed in life, except in the case of the Law, where memory is a professional asset.

Advice on Memory. When we learn something we do two things: we make certain impressions, and, secondly, we connect. There are the ideas, and there are the links. If memory is to be good, the impressions

must be deep and permanent. The connections must be strong. In order to ensure this one must bear in mind the nature of the synopsis. Frequent impression made not during fatigue but freshness is most calculated to affect it. Do not allow the resistance chance to recover. Moreover, strong impression is of more value for learning than long impression.

Hence in learning by heart do not sit down to "swot" for three-quarters of an hour—still less to dawdle over the thing under a mistaken idea that two hours gentle, ambling work is equal to five minutes headlong gallop. Sit down to five or ten minutes really hard concentration; then leave it. Do another five minutes later on. If you want to learn a thing keep it always by you, but never long before you. And never learn when you are tired.

The Facts of Memory. A quick learner is a good retainer. There is no truth in the saying, "easy come, easy go."

We never completely forget. Even if not one word or fact can be recalled, it will be found that past learning causes a shortening of time in learning again.

The process of forgetting is a process of generalising. It is a dropping of details, first the smallest, then the medium, then the big until only the most general principles remain. In fact, forgetting is an excellent method of *précis*: if you learn up a book, half-forget it, and then write an account from memory, you will find that you have made a far more intelligent *précis*-selection than you could have done by any other method. It is the mind's function to select.

The curve of forgetting is most important. We forget, after learning, with decreasing rapidity. More goes in the first few minutes than in the next few hours, more in those few hours than in the next few days.

Hence scatter your repetitions as advised above; make the early repetitions the most frequent and close together.

Learn as fast as possible.

Learn as a whole, not by verses or pieces.

Eliminate all difficulties before starting to learn, and avoid all chances of errors. An error takes longer to eradicate than a whole new section to learn.

Learn under real conditions. Do not write out a speech, nor speak a thing which you will have to write out. Learning by writing teaches recall in writing, and by speech in speech.

Always pause after learning. A sudden immediate new impression will eradicate the one just made.

Remember that time teaches. During sleep memories are sinking in. Therefore pause after learning.

The Application of the Laws of Memory. These laws apply mainly to the learning of words, the learning of poetry, of vocabularies, etc. They may be applied partly negatively in the regulation of school conditions, partly positively in teaching children how to learn.

With regard to school conditions, lessons which involve learning by heart should be short. They should be frequent, very brief periods once or twice every day. The memorising of lessons should always come when the child is fresh, early in the day.

With regard to teaching the child how to learn, of course, such advice may be given incidentally here and there, especially to those unhappy children whose minds do not seem to have been constructed for learning poetry. All through life there are things which have to be learned off by heart, and it is extremely valuable that the child should know how best to set about it and take advantage of the characteristics of his brain.

Rote and Rational Memory. Psychologists make a distinction between these two kinds of memory. By rote memory is meant the power to remember mere words. It does not matter whether the words have meaning or not. Pure rote memory is the remembering of quite meaningless syllables, such as Bij, Wiz, Gat, etc.

By rational memory is meant the power to recall ideas. Ideas are nearly always, if not always, associated

with words, but the words are the least essential part. Thus "Boy, Teacher, Class, School," is a train of ideas. To remember that train of ideas is to use Rational Memory. It does not matter if the words are altered, *e.g.* "Pupil, Master, Division, College." The memory is a memory of ideas.

These two memories are widely different things. Some persons possess a very powerful Rote memory, while having a very poor memory for ideas. Others have great Rational memory, but are very deficient in Rote memory: many learned men, for example, are extremely poor at remembering names; a name is a word without real meaning; the Professor can recall all the *ideas* of his subject, but he cannot recall the meaningless word of a visitor's name.

Children, on the other hand, are more usually of the opposite type. Set a child to learn a poem, and he will find no difficulty in committing the words to memory. But ask him to give the *sense* of the poem in other words, and he cannot do it.

To the child this peculiarity is very valuable, because he is learning his language. Language is a collection of mere words. He has to learn these, whereas the older man has learned his language: in most cases, rote memory decreases and rational memory increases with age.

Which is the more valuable in adult life? Which should the teacher attempt to cultivate most carefully? Clearly, the memory for ideas. Apart from the learning of language, mere memory for senseless syllables, for meaningless names and odd dates has very little value. Such things are in books: they can be written down. What the world needs is ideas, and, as I have already said, especially original combinations of ideas.

Hence a very grammatical and linguistic course in a school is of very small value. The knowledge of a foreign language is, no doubt, of use in itself. But it does not take one very far. The best linguists in

England are, perhaps, the foreign waiters in the restaurants: some can talk well in as many as four languages. What benefit? If their memory for ideas were equally exceptional they would be Cabinet Ministers or University Professors.

Why does the child tend to make so large a use of Rote memory? Why is there so much of this in the schools? The reason does not lie wholly in the nature of the child. The child's rote memory is undoubtedly better. But he has also a good rational memory. For remember that in learning his mother-tongue the boy is learning not merely words but often the ideas also which those words designate. Yet certainly it is true that most children learn off parrot-wise a great deal which they need not and should not learn in that way. The reason why they *should* not learn it in that way is that rote memory is not permanent: it fades very quickly. And, secondly, it is very "inapplicable." You may know the directions for mixing a Seidlitz powder off by heart by rote memory, and yet not be able to mix one. Whereas if you know the ideas, apart from whether you can repeat the words or no, there is no doubt of your capacity.

The reason for this excess of Rote memory lies partly in the far too linguistic curriculum. It lies, secondly, in an insistence by class teachers on verbal accuracy: in fact, generally on assimilation rather than selection. Children are told to "learn up these ten pages of history": they are questioned on them in the minutest detail, so that "learning up" is tantamount to "learning off by heart." Some masters set a premium on quotations. Whereas rational memory and really valuable work of the sort required in life would be called out by a slight change of command into "get up from these three books the main ideas." Here we ask the child to gather not names or words, but thoughts; we ask him to select and to systematise.

Thirdly, teachers mainly because of our class system

are apt to set children to get up a subject as for catechism. This involves getting up piece-meal replies, which always have a tendency to dead facts instead of thoughts. In the Seminar or Recitation system, or in the Oxford Essay system, the student is called on to give an account, to give a statement and his attitude to a matter, instead of miscellaneous replies, such as "When did he die?" "Who came next?"

Fourthly, teachers are apt to think of study in terms of subjects. They think of "William the Conqueror" or "The Civil War," or "The French Revolution." These are sections of knowledge, gobbets of facts. Perhaps the reader is prepared to agree with me that fact in itself has no value. It is valuable only in so far as it bears on action. The real value of "The Civil War" gobbet of knowledge is the light that it sheds on present-day problems. The influence of the Civil War is with us yet. Only by going back can we get the true meaning of the present. But we start from the present, a problem of to-day, and turn backwards. That is the way of thought. To learn mankind in sections of ten pages from the Flood down to the present is to put into one's mind not a selection of thoughts, active dynamic forces, but a mass of unselected jetsom. If the teacher's aim is thought, the child will learn to think. If his aim is words and disjointed questions, the child will learn words and disjointed facts without problem, purpose, or bearing.

This learning without a purpose is due partly to a class system. It is due also to the schoolmaster's esoteric tendency. Teachers tend to look upon the facts of psychology which give the art of learning as a professional secret. They will administer the Herbartian steps to children, but no teacher ever seems to think in this way: "If these Herbartian steps are so valuable in learning, surely the children will be glad to know of the idea. I'll give them the tip." We proceed in an atmosphere of mystery, of conscious rightness, but we won't let anybody know what we

are getting at. "Learn Latin and Grammar." "But why? Why?" "A-ah!" And when they have finished it is a sort of "There, didn't I tell you I was right; I've been training your Faculties!" So in a less degree with every lesson. "Learn the French Revolution." "But why?" and at the end, "Now I'll tell you the reason. The French Revolution has had such and such an effect on the present day."

Why did not we set the problem, "What has been the effect of the French Revolution on the present day?" and thereby give the work a meaning and a reason?

Why did we set the child to assimilate facts to be used afterwards instead of setting him to select and to think from the first? Because we like to be esoteric, to proceed in dark tunnels, and pop out at last into daylight with a "There, I told you we were getting somewhere."

The real essence of memory is its selective power. The mind was never meant to recall everything: it was meant to recall only that which bears on a certain purpose. In support of this it is interesting to examine what memories have survived from the early school-days. History, Geography, the Classics, seem to have vanished hopelessly. How very few lessons can be recalled.

But acts of skill in games or in manual work or art have survived, and clustered round them a good deal of fact relevant to them. I cannot say how far the reader's self-examination will agree with mine. For my own part I find that what I learned to do has lasted, and all that bears on the particular act or problem of doing, but the non-purposive ideas of lessons have almost entirely vanished, except here and there some piece of preparation work which I did myself and that cost me some effort.

Act-Memory and Idea-Memory. If we examine Rote memory we shall find that it is in reality only a small section of Motor Habit. The learning of a

word or syllable devoid of meaning is the learning merely of a co-ordination of movements of the jaws, tongue, lips, etc. The rote memorising of a poem is in no way different from the acquirement of the steps of a dance, save for the difference of the muscles employed. It is a very complex act of motor skill.

This memory of movements is distinguished first by the fact that it does not contain a definite sense of "pastness," and, secondly, by the fact that it is produced by repetition.

But when we speak of the memory for ideas we are evidently dealing with a very different phenomenon altogether. Take, for example, memories of childhood, or memories of the experience of last week. The essence of these memories is their definite "pastness." Their clearest characteristic is that they were not instilled by repetition: they are records of something which happened *once* and could not occur again.

The brain is merely a medium through which stimuli become actions: it perceives the world merely as incipient actions: its memory is the memory of actions, *i.e.* motor habits.

How can we suppose that this almost mechanical instrument should contain the aggregated sum of past experience, of change which is the very essence of self. Self is a perpetual and continuous change, a rolling up of the past into the present. Perhaps this idea-memory is more a phenomenon of the vital self than of the brain.

It must be very clearly distinguished from the motor habit memory. In a material memory of automatism some connection may not be made sufficiently strongly, and the act may not be recalled. But in the memory of ideas in the Self or in the Spirit, or the Life (as one pleases), memory is the essence of that self's continuity: everything is remembered: every event was an irrevocable change.

But not everything is recalled.

A stimulus comes to the Action-depot, the Brain.

Because of its complicated system of higher connections, or levels, it is possible for a stimulus, instead of running out straightway into action, to be distributed into a range of possible, suggested germs of action. In fact, there is a pause between stimulus and action, a pause in which is seen a row of short-ends of possible things to do. In that pause is the consciousness. The direct reflex of a blink is not conscious : consciousness comes in the interval when something happens—what shall we do ?

Into that pause idea-memories of past experience are inserted, bearing upon the problem of the choice of action. The idea-memories are selected by the shape, by the needs of the present situation. They determine the choice. So not all memories are presented, but only a few which can get through the particular shaped aperture. Thus memories are recalled according to the needs of action.

This comes to the same thing as saying that in the normal state we remember every experience, but we can only recall that which bears on action.

The Inhibitory Power of Action. Just how far you are prepared to accept this theory of idea-memory, as the inevitable sum of changes in the Self, does not very much matter. It is rather a philosophic than a pedagogic point. This, however, is perfectly obvious and beyond controversy, that we have—somewhere—an immense store of idea-memories. That we cannot recall these memories at will. That they seem to arise spontaneously according to our needs. Sit down to some active work, and there comes a flood of relevant ideas : everything else vanishes. I do not think of the mechanism of a typewriter while I am mending my bicycle—unless it bears on the problem.

Only when the restraint of the needs of action is removed do memories flow freely. In sleep action is temporarily in abeyance : the memories flow through opened flood-gates in a tumultuous rush. Insanity is usually associated with some disturbance of the powers

of action—some form of paralysis. Perhaps the essence of the insanity lies in this disturbance of action: the bar of the Needs of Action is removed and mania or delusion is but the resultant rush of unchecked and unselected memories.

Just so far as the mind is fixed upon action, just so far are ideas selected and controlled. Free thought and free imagination are due to absence of active purpose, or even to partial incapacity for action.

It is noticeable that the child has a free and uncontrolled memory bearing a close relation to his incapacity for action; and that as life progresses and the call of action becomes more insistent and the response more efficient, this free memory is gradually lost. Moreover, the popular belief is worthy of notice which assigns taciturnity to the man of action, and garrulousness to the incompetent. Loquacity is hardly a reliable gauge. But this at least is highly probable that the more practically efficient the man is, the more are his thoughts bound down to the needs of action, and the more is the free flight of fancy inhibited. The man without active needs is in a more or less pathological state of mental flux.

Education and Action. This modified doctrine has evidently a very direct bearing on education. The aim of education is to produce the greatest efficiency possible in the art of living. This efficiency is produced partly by the acquisition of acts of skill, and partly by the acquisition of experience. Skill enables one to do. Experience directs what to do. "Experience" has been seen to mean idea-memory directing the choice of action.

A system of education which teaches knowledge only, or knowledge as a separate department, postulates the power of assimilating and recalling knowledge independently of active needs. A lecturer on pure science or on pure history is presenting ideas, the practical bearing of which will only be seen at a very much later date. The test of this course of education will

probably be an examination of some kind in which the student will be called upon to reproduce in words the ideas given him, independently of any definite need of action.

An education in which the Theoretic and the Practical are separated necessitates the removal of the inhibitory force of action. It involves the recall of ideas independently of the demands of action. It is a violation of the natural system of the mind. It causes an actual decrease of mental efficiency. It is an actual encouragement to mental unsoundness.

The effect of the system may be seen most plainly in contrasting the Technical and the Apprenticeship course. The product of the Technical school is often called by the manufacturer unpractical, a dreamer, is called "too scientific." Yet he has learned all that the mill-trained worker knows, and more both in skill and knowledge. The fault lies in this, that his theoretic and his practical course have been separated. He knows all, but he does not know from the aspect of action. He can do all, but he does not do it from the aspect of knowledge. His mind has been split in two and damaged in the process.

The division into theory and practice is itself a symptom of the great underlying "Magic fallacy." The learning of "Theory" is felt to be some mysterious mental medicine; by learning one thing you acquire the power to do something else. A carpenter is made to do pure Geometry as his "theoretic" course, a brewer is made to do Mathematics, Physics, Chemistry, in his first year; he does Organic and Inorganic Chemistry in his second year,¹ all this before he has

¹ The above examples are taken largely from the Syllabus of the Manchester Municipal School of Technology. Its preface (1911-12 edition) contains the following interesting sentences: "The chief aim of all preparatory study should therefore be the effective training of the Thinking and Observing faculties. . . . The essential aim of the instruction is the training of Faculty through a systematic course of sound theoretical study, and the development of Resourcefulness and habits of Self-reliance by means of an exact, thorough, and progressive course of laboratory and shopwork."

made a pint of beer, or can possibly see the practical bearing of the law of Archimedes or the Pons Asinorum on the production of intoxicating liquors. It is theory : an indirect magic means of reaching practical efficiency without actually learning it. So, too, the teacher studies Stout's *Psychology*. By some mysterious abracadabra pure analytic psychology will make him capable of managing a class without teaching one.

The whole fallacy arises from the supposition that knowledge gained independent of practice is equivalent to knowledge gained with practice. And this supposition is itself largely due to the fact that Educators are unpractical men divorced from action ; and that practical men are not the sort to let their lives run to seed in words.

On the contrary side we urge—

1. That the normal mind can only group ideas round actions. It can neither learn nor remember independent of the practical problem. Nor independent of action has knowledge any meaning.
2. That the divorce of idea and act not only makes education impossible but actually leads to an unsound state of mind.
3. That this enormous educational system in pure knowledge which civilised countries have evolved is thus an enormously expensive parasite, and is causing if anything a progressive degeneration of the efficiency of the civilised world.

In brief, the only reason we *know* is for doing. The only way to know is to learn for doing. The only way to learn to do is to learn so as to do.

Education for Action and Education for Examination. The difference between taking a course in geometry or in psychology and learning to brew or to teach consists in this, that in the one case my knowledge is recalled only by concrete need ; in the other case it must all be capable of voluntary recall for an

examination independent of the action to which it relates. The idea-memory is not voluntary, *i.e.* under the control of the will except in so far as it is associated with the rote memory. I may make certain of being able to recall a series of ideas apart from their natural appearance in response to active need by associating them with a false active need, a series of motor skill, namely, words. By short-circuiting my ideas into words, by removing from them their real active meaning I can make them capable of voluntary recall. But a practical man cannot voluntarily recall the theory; it comes to him only with the summons to action. The power of talking is often a correlative of incapability to do. To learn to be examined is to learn to talk instead of to act. Life demands action. An education which is to produce efficiency in life must consist of action and aim at action, a daily routine of learning how to do and practising doing—doing the actual things which will have to be done in life.

The Development of the Child's Memory. Two extreme states of memory may be distinguished: first, where the flow of the idea-memory is absolutely uncontrolled, as in dreams; secondly, where it is under the complete control and regulation of action, only that being allowed which is necessary for the guidance of conduct.

A child is in the first state. The proverbial richness of the child's imagination is not a gift nor the presence of any positive quality: it is the absence of a quality, a symptom of the chief weakness of his mind. He can learn things which have no bearing: he can think and imagine apart from reality.

As the healthy child grows older day-dreams vanish, and with them the power of unintelligent cram. At the same time as the day-dreams vanish our minds begin to revolt at the learning of utterly useless and irrelevant matter.

Both these are symptoms of an increased adaptation to the demands for action made by the external

world. They are signs of an increased mental organisation.

The education given to children in the Primary schools is almost purely literary, and even where not literary it is purely a book education, an education of pure knowledge. Even nature-study is a learning to know, not a learning to do. Such an education, laying enormous stress on the subjective side, on ideas and thought, and none on the objective side, action, emphasises just that point in which the child is weakest. The child's weakness is that he tends to be the Dreamer and the Scholar because his motor capacities are as yet small. This education was derived from the universities, for it is a shadowy model of the classical public school, and ultimately it leads to the University *via* the free-place and the secondary school. Its ideal is the scholar and the professor. Such ideals may, perhaps, be allowed in later life or in a different social grade. But as the ideal of the Primary school it emphasises and encourages the child's fundamental weakness; it actually retards his development and disturbs the organisation of society with no profit, but only harm.

CHAPTER IX.

INTELLECT,

The Place of Intellect in Life. In reading many of the standard text-books on education one is struck by the attitude adopted towards intellect. Intellect is taken to be the sum and aim of education. Education is for life. Intellect, therefore, is the sum and aim of life. The education which is given is largely a liberal education ; it prepares not for the practical duties but for the "higher things" of life. Intellect is one of the higher things of life. The Intellect which holds this lofty position is a philosophic scholarly intellect. For this the man lives, and for this the child is educated.

The argument is roughly as follows : "Man is an intellectual creature. Intellect distinguishes him from the animal ; he can think. Another distinctive trait of man is his power of education. The education of man should aim at developing his most distinctive gift. Education aims at cultivating the intellect."

Hence the pedagogic estimate of values. We see, for example, the statement that Athletics are valuable because mental work depends on physical fitness. Manual work is valuable as a mental training. One of the arguments against immorality in juvenile books on such subjects is that it injures the intellectual powers.

Whether we agree with or dissent from this educa-

tional doctrine must depend on what place we assign to intellect in life and in evolution. By tracing the genesis of intellect perhaps we shall see the purpose for which it has evolved. By learning its purpose we shall learn the standpoint from which it must be approached in the school. If we find that man lives to think, that his evolution has led up to pure unapplied intellect as its highest goal of development, we shall give a very different education from that which must be administered if we find that man thinks to live, that thought is only a means to some ulterior end; that ulterior end will then have to be our purpose, and the development of intellect subservient to it.

In making this explanation it may be necessary to repeat one or two matters which have been mentioned in the previous or in previous chapters. The repetitions are made only so as to show the place of mental processes already discussed separately, in the larger setting of life as a whole.

The Storing of Energy. Distinguish two kinds of material in the world, Lifeless and Living. The Living matter is distinguished by its power of storing up and expending energy. Ultimately that energy is derived from Solar heat. The vegetable by means of its chlorophyll utilises the heat of the sun to fix the carbon of carbonic acid. While through its roots it extracts nitrogen from the soil, that nitrogen being ultimately derived from the air. Other vegetables may utilise the work of vegetables by taking their ready fixed carbon from a soil composed of vegetable waste. The vegetable is mainly anabolic (or building up): it stores much energy and uses very little, only so much as is needed for the purpose of storing. Metaphorically it is making fuel; it only uses a little fuel to run its factory. It is static; it remains in one place where materials are. Its materials, carbon and sunlight, are everywhere, hence it does not need to move to get its supply.

The animal cannot fix carbon : he finds it already fixed. He absorbs the ready stored energy of the vegetable. Vegetables are not to be found everywhere. Hence he must move so as to get his energy-giving materials. The movement may be very small ; the creature may merely wait for food to pass by and the only movement required is that of reaching out and taking it. The simplest form of animal thrusts out pseudopodia to apprehend food. It lacks any developed power of locomotion. Its food is vegetable. Higher animals absorb the ready fixed carbon of other animals. Thus they get their energy in a more condensed form. But animals are still less evenly distributed than vegetables. Moreover, these other animals have the power of movement, of running away. Hence in the higher animal a greater power of movement is required.

Thus the higher up we go in the scale the more condensed is the source of energy. As a result, the creature who obtains this food has more energy to spend. The more condensed the source of energy the more movement required to obtain it ; hence the animal who subsists on this food must be capable of more movement. The higher the animal the greater the ease with which he obtains his food ; hence the greater the surplus balance of energy he has for development and for play.

The Function of Nervous System. The animal's method of food getting is not a continuous chemical process like that of the vegetable. Food passes the animal and is apprehended. For this co-ordination there must be some method, firstly, of recognising food, second, of co-ordinating with the recognition movements, apprehending. Hence a system of sense organs indicating an opportunity for action, and transmitting the impulse to organs of movement. As we have shown already, in the first instance this co-ordination is simple, the direct connection of sense- and movement-organ. In a later stage centralisation takes place :

all tracts of incoming impulses are brought to a central Exchange where they are connected in a complicated manner with the tracts of outgoing impulses so as to allow every possible combination of routes. By this means any one stimulus may be associated with any other stimulus, and may flow out into any one or any combination of movements.

The Body as an Organ of Movement. The vegetable is "anabolic"; its construction is in excess of its expenditure. The animal is "katabolic"; its powers of expenditure are in excess of its construction. The vegetable's life is a process of steady accumulation and small expenditure; the animal's life is a process of rapid accumulation and rapid expenditure.

The energy is derived from food, from the substance of other animals, thus ultimately from the vegetable. The food is of three chief kinds, proteids, carbohydrates, and fats. The proteid is used largely in building the structure of the body: the carbohydrates are transformed into glucose, thence into glycogen, supplying energy.

Glycogen is formed by the liver. The liver is stimulated by muscular movement. It forms glycogen in exact proportion to the amount of motor energy expended. The glycogen supplies energy to the muscles where there are large permanent stores, a reserve of energy. It supplies also the nerves, where the store is smaller but the supply is more rapid. Nervous impulses and consequent movements result in a breaking down of the complex carbon-syntheses into simpler structures, ultimately into the waste products.

It would be true to say that the body of the animal thus centres round the organs of movement. They account for a large proportion of its weight, and employ the major quantity of its energy. The organs of movement are the muscles, which execute the movement, and the nerves, which prompt the movement. The nervous system is the last to lose in weight in event

of starvation of the body, not because it is the organ of thought, but because it is the medium of motor response, the fundamental function of the body.

The Evolution of the Human Body. Look upon life as something always trying to find itself an instrument in which it will get the fullest scope ; which will allow it to express itself most completely and most freely. All the varieties of vegetable and animal nature below man are different attempts at this aim. They are different instruments which have been tried ; something better has been evolved ; they have been left still working, relics of abortive experiments not so bad (in most cases) as to break down and cease work, but leading to nothing. They just go on, unprogressively.

The Problem of Energy Supply. Early attempts solved the problem of a continuous supply of energy very well. But the means taken to insure that supply resulted in immobility. Life needed an instrument of ample and copious action. Vegetable "instruments" were a failure. The vegetable was used as the food of the next attempt.

The Problem of Locomotion. The next attempt was something that could move, the amoeba, a bit of jelly in water. This rather was moved than a mover. Later attempts are provided with more perfect powers of voluntary locomotion.

The Problem of Protection. Past failures provided the food substance for future attempts. Clearly these new attempts must be protected against the reverse process. If animals prey upon each other, clearly future "instruments" must be protected against being preyed upon. There are two alternative methods. If you are being attacked, you may either put on armour so as to be invulnerable, or you may become especially nimble so as to get out of the way. This problem presented itself in human warfare. The obvious thing to do is to case oneself in armour. But armour both hampers one's movements and one's view of the out-

side world. The same discovery had been made long previously by Life. The attempt at self-protection by means of a hard skin or shell resulted in an obstruction of sensation and impeding of movement. Safety was bought at the price of sensitiveness and self-expression. So the crab and the flea remain abortive experiments, still working.

The Problem of Tools. The search for food postulates the use of Tools. There must be a tool for movement, a tool for catching, a tool for killing, a tool for grinding up. In a more complicated stage we have tools for digging, boring, building, spinning, etc. The obvious course is, in devising the instrument of life, to make the tools a part of the living creature. Thus the jaws of ants have become diggers, the feet of the crab pinchers, the nose of the mosquito a sucker, so, too, part of the spider's body has evolved into a loom.

To a far less degree we see the same specialisation in the monkey. The foot is a walker, the hand is a hook. So, too, in the human infant, the hand is a hook, the lips are suckers. But the foot of the monkey can grasp as well as walk. The lips of the child later on can perform hundreds of different acts; his hands thousands.

What follows from the specialisation of the crab, the ant, the bee, the saw-fly? Suppose I have a rough piece of pliable iron. So long as it remains in that unspecialised state I may use it for many different purposes. It makes a moderate hammer and an indifferent pair of pinchers, and when it fails altogether to serve the purpose it may be used as a handle for some other object going with it to form a more perfect tool. But if I harden that piece of iron after having bent it into a particular shape, and if I sharpen the end into a chisel, it will no longer serve as a hammer. It performs one function more perfectly, but it is no longer capable of adaptation to the others. The piece of soft iron is of limited size. I shape and harden the

various parts of it into particular tools until all are used up. It is clear that the more I perfect my weapons by such specialisation the more I limit the range of my activities. So far as breadth of activity is concerned I was better off with the one original soft strip.

The dilemma is, then, whether to shape various parts of the body into specialised tools adapted to single activities, or whether to keep the limb unadapted to any one function but not incapable of performing any task.

Specialism is a success up to a certain point. It produces more perfect craftsmanship. But if I make my hand into a pair of pinchers it loses its ability as a hammer. If I make my mouth into a sucker it is no longer available for biting. After a time all my members are used up in a small range of functions, and my range of activity is capable of no further extension.

In fact, we have here the blunder of the heavy armour over again. The hardening of the skin was a special adaptation. Harden the body for special adaptations, and its plasticity and range of activity is limited.

The alternative is the use of an external tool. The hand is not made into a hammer, but is kept plastic. It is capable not only of grasping a hammer but also of grasping a screwdriver or anything else. Instead of being a tool, it is a user of tools. Hence the range of activities is unlimited, and the perfection of the work depends on the perfection of the external lifeless tools.

Specialisation and Knowledge. In an earlier chapter we explained that the messages which the mind receives are not presentations of objects but of possible actions. The nature of the presentation will clearly be determined by the nature and range of the actions possible to the perceiver. A stimulus to which we cannot in any way react will not be presented, e.g. ultra-violet rays. A difference in the way of reacting will

be accompanied by a corresponding difference of perceiving.

We have noted one fundamental difference between man and animals in the way of acting, namely, that the tool is a part of the animal's body, whereas it is not a part of the man's body. Therefore the animal perceives objects direct as material for his action. Whereas man perceives objects relatively as tools, as possible intermediary instruments. This difference can only be understood by examples.

A certain kind of wasp paralyses its prey by accurate stings on the nervous ganglia; thereby it produces coma but not death; hence the prey is preserved, yet kept fresh against the advent of the wasp's offspring. Are we to suppose that this wasp in acting like a most skilful surgeon has an intimate knowledge of physiology? No. Parts of the wasp's body are adapted as instruments for that particular kind of fly. The arrival of the fly acts as a direct stimulus to a pre-adapted system. There is a direct sympathy between the adapted and the thing adapted to. We may call this direct sympathy of the two halves of the same process thus adapted to one another Intuition.

But man, the surgeon, is not directly adapted to the organism on which he is going to operate. His hand is not a special instrument for removing the appendix. Hence he has not a direct intuition of a diseased appendix so that it provokes an immediate unconscious response. On the contrary, the surgeon uses an instrument which is not part of his body for this operation. His mental process, therefore, is not a direct relation between himself (the instrument) and the object, but an *establishing* of a relation between an external instrument and an external object to neither of which is he adapted directly for action, and hence neither of which is perceived directly or Intuitively.

The reader may have difficulty in understanding the meaning of this process of "Intuition." The reason is obvious. Intuition (Direct Knowledge, or

Instinctive Knowledge) and Intellect (Relative Knowledge) are two alternative ways of knowing the world, corresponding to two alternative ways of dealing with the world, Direct adaptation by specialised members, and Indirect adaptation (through the mediumship of external tools). Man's thought is intellectual: words are instruments of intellect. I am trying to express the *alternative* method in terms of intellect; you are trying to understand it with intellect.

Only in a few things does man know directly or intuitively, namely, where he is directly adapted. He is a development out of an intuitive animal with specialised members. He has relics in his mind of direct adaptations. These are called instincts. For example, by "love" we know the mate as something to which we are adapted. By Reason we know only relatively in the same way as we know a hammer or a brick, or a chemical, or a machine. Hence our feeling of the underlying falsity of many novelists' intellectual analysis of such matters.

Let the reader practise a little introspection. Let him consider his response to living persons: it is without consciousness; it is like the sympathetic vibration of two kindred piano wires. Let him consider his treatment of a machine: it is a conscious considered response; he is *thinking*. His thought is relative: he is seeing the relation of one thing to another, causal relations. A Causal relation is the relation of a tool to an object: This can produce That result.

The Function of Intuition. We described intuition as a "sympathetic response." Sympathy involves a force upon the side of the object. Sympathy is not the stirring of something into life; it is the concord of two lives. We showed that the animal is always dealing with life: he obtains his food from something already living. The intermediary of the tool is a part of the living animal. The animal is dealing with living things: intuition is a method of perceiving life; it is a sympathy with or a sympathetic response to life.

In the instances given, in each case both subject and object were living. The animal's instinctive knowledge of his prey ; the man's instinctive selection of his mate ; the woman's instinctive understanding of her child ; these are the typical instances of intuition. Matter cannot be known intuitively, because the living knower has nothing in common with matter. There is initiative only on one side. Intuition is an extension of self-knowledge. It is life's knowledge of life which is, as it were, a part of itself, or a part *with* itself of the sum of life.

The Process of Intellectual Thought. Man without the specialised instrument as part of his body is not in direct relation to life. He is considering matter as an intermediary tool. He perceives that matter not as a thing to be acted upon directly but as relative to a direct action. He perceives matter relatively. He perceives it *as its Uses*. In other words, the perception presented to his mind is a Possible Instrument for the purpose of response.

Man's absence of specialised bodily instruments gives a greater range to action. Being able to do more he is open to more suggestions for action, he perceives more.

On the other hand, he is at a great disadvantage because of the narrowness of his method of perception. He perceives not things but "instruments." He does not receive a direct sympathetic intuition of an object, but he perceives instead of the object *what can be done with it*. He sees in what way it can be divided and reconstructed into something else. Hence intellect is essentially and incurably analytic. That is its purpose. If I ask, "What is it ?" I am told its parts. "What is water ?" " H_2O ." This is not an answer to the question, "What is it ?" ; it is an answer to the question, "What can I do with it ?" The answer is : "You may divide it into two parts of hydrogen and one part of oxygen"—presumably so as to recompose it into something else. If the question be asked of a

father, "What is your son?" an answer of this kind is at once seen to be preposterous. The answer that he is so many bones, so much flesh, so much fat, is the butcher's answer, because the butcher's question is: "What can be made of this?" So, again, the chemical definition of so many parts of carbon, so many of water, so many of mineral salts, makes the tacit assumption that we wish to decompose the object and synthesise it into something else. But the father knows what his son is: the knowledge is a feeling; it is intuitive: he cannot express it because language itself is an analysis; one thing is expressed in many words. But he knows, and he knows that these answers are no answer to the question.

Intellect being thought in terms of tools is capable only of dealing with matter. It is incapable of the idea of that continuity of change which is the essence of life, because life and continuous change cannot be made into tools, cannot be divided and reconstructed. The Fundamental Laws of Thought of the Logician are the postulates necessary for construction—The Law of Self-identity. "Things are always the same" is an obvious necessity for the workshop. We cannot devise what we shall make out of a material if that material changes its nature, nor can we deal (the Law of Excluded Middle) with a thing which is and is not. Whereas the essence of life is its impulse, its thrust, its continual becoming. Motionless, unchanging, undeveloping life is a self-contradiction. Motion is meaningless to intellect. The intellectual idea of energy is of a storage battery or a divisible line of force; contrast the intuition which one has of one's own vitality. Life is perpetually something new and unforeseen. Intellect explains the new always in terms of the old. It thinks in terms of co-existent spatial entities. Space and matter mean immobility: there is no place in them for new. Newness is change. The only change in space is the change of something being made into

something else whose properties were already inherent in the first.

In brief, the evolutionary purpose of intellect is the consideration of matter. In considering life it renders it immobile, it proceeds to divide it, it considers its impulse in terms of material change when the new was contained in the old. It cannot understand life.

Intellect and Pedagogy. Pedagogy has been based on intellectual thought. The aim of intellect is the dearticulation and reconstruction of solids. This is just what Pedagogy has done, as we suggested under "The methods of psychology."

Pedagogy was first vitiated by Locke's view of the mind as a piece of wax. This was not due to ignorance of the principles of heredity: it was merely intellect's failure to understand the impulsive nature of life: it could grasp only a motionless, impressible aspect. The workman looked upon life as something that can be "worked," thumbed into something else.

The Associationists fell into the error of division. They dearticulated the mind: they made the continuous progress of thought into a simultaneous row of bricks, and considered how these bricks could be put together again. Locke made Life into a potter's mass of clay: the associationists made it into a builder's heap of bricks.

The Faculty psychologists made the mind into a factory with various departments, Memory department, Thought department, and the rest. They made Life into a row of machines.

Present psychology has avoided this error. It considers the thought process as a whole. But it has divided the instincts as if they were a row of little mines of gunpowder co-existing in the mind, liable to be fired off by the right stimulus. The division of the instincts lies in the various objects to which we are adapted. A child is not made up of instincts: the world is made up of instincts, of objects whose call for action appeals to the one indivisible and continuous

life. Yet we hear of the developing of separate instincts in the formation of character, like the exercising of different muscles. We forget that the child is a whole, that character is not a sum but a co-ordination. Even "co-ordination" is only a bad metaphor. Character is a direction of development.

Matter is uniform ; one ball is like another : and the sum of ten thousand balls is equal to the separate units. We may subtract from one ball and add to another till we produce all balls of equal weight. If this be done not materially but mentally, we call it an average. We apply this method in child-study. We assume that one boy plus another boy makes the sum of two boys. In matter $x + x = 2x$. But two boys are x and y : they cannot be added. We take children as uniform, and take the average of the study of 10,000 children, the average of $x + y + z$!

Hence pedagogy is discredited by the born teacher and, above all, by mothers. So a scientific analysis of love would be discredited by lovers, a physiology of flies by wasps, and botany by bees.

The Place of Pedagogy. Intellectual pedagogy has its place. The boy is an intellectual being ; he is being prepared for an intellectual world ; the school, its organisation and its time-table, is an intellectual product. Only when we deal with the nature of the child for purposes of convenience, as a working hypothesis we may treat children as uniform, and we may divide and analyse their souls ; but let these working theories be realised as such, and let us check ourselves at every step by our intuition of life lest we fall into fallacy.

Intuition is vague. We cannot derive from it complex organisation. It is the nature of our minds that we can only act by science. But that science must be based on and checked by direct intuition, not built upon fiction of meaningless analyses.

The Education of Intellect—Analysis of Intellect. The problem of analysing the intellectual process has

occupied the mind of scientists, of logicians, and of educational psychologists since science first began.

We see that thought in its simplest form is response to a stimulus. In certain cases (where there is a direct adaptation) that response is immediate and without consciousness. But in other cases there is not direct adaptation; and there is not only one possible course, or one only possible instrument, namely, the bodily adaptation: there are many possible instruments—material, external instruments. Many instruments have been used in the past: we have made many adaptations in the past. These past adaptations remain with us as memories.

When there is no one adaptation, response is not immediate. There is a pause. We have said that in this pause memories of past adaptations, the cut ends of possible actions, appear before us as a range of choice. The present situation is assimilated to one of these possible alternatives and action results. In dialogue form the process is

“What shall I do?”

“I might do this or that, or that other.”

“The problem fits in with that other,” and it is done;

whereas in the direct adaptation the process is

“What shall I do? Do that!”

There is no pause, no time for the question, no hesitation in which we realise ourselves, no consciousness.

The analysis of intellectual thought given above corresponds very closely with the analysis suggested in Dewey's *How we think*:

“A Problem.”

“Suggested Solutions.”

“Selection of a Solution.”

“Action.”

The “Problem” is the stimulus. Into the pause between stimulus and action memories of possible adaptations are inserted, and the stimulus is assimilated to one of them.

For example, I see a strange animal on the desk at which I am writing. This insect is a "change in the environment," a problem demanding a response on my part. Various possible adaptations are presented to me which I have employed towards creatures in the past. The present problem is assimilated to one of these responses, and the stimulus passes out by that route.

Class Ideas. There are two aspects of the process: the incoming and the outgoing, the stimulus and the response. The memories which are presented to me are memories of similar processes in the past. They, too, have a dual aspect, the incoming stimulus and the outgoing response. At the commencement of the process we have a stimulus and a range of memories of past stimuli and their responses plus memories of the further stimuli which resulted from the changes in the environment caused by the response. To make this clear by the example, there is the stimulus—sight of the strange creature—and the memories of other stimuli (sight of creatures) plus the responses to them, dangerous creatures of slow movements plus careful squashing, creatures of rapid movements and a different method of attack, harmless creatures plus brushing away, big customers capable of immediate reprisal plus tactful avoidance. Each of these memories is the memory of a certain group of problems (animals) and a common solution (a method of squashing suitable to all of that group). Each is a class idea built up by long experience.

The possible number of actions of which the body is capable is very small. On the other hand, the range of stimuli is almost unlimited, and always in excess of the range of actions. What, then, is the intellectual process? It is a grouping of the innumerable stimuli round the limited number of reactions, and the assimilation of new stimuli to one of these groups. Thus round the reaction "brush away" are grouped memories of the incoming or "sensory" stimuli to

which that reaction is suitable. Particular ideas, namely, memories of particular stimuli, are grouped round the common response. The process of thought is then :

1. Sensory Stimulus.
2. A range of possible "classes" (memories of various stimuli and one common response found suitable).
3. The assimilation of the stimulus to a class ; and then :
4. Action according to the reaction which forms the centre of that class.

Reasoning. Inductive reasoning consists in class formation. A white object "A," presenting the various sensory data of chalk, is found to dissolve in hydrochloric acid.

A second *B* does the same.

A third *C* does the same.

Hence the general law is made, "All chalk (all objects presenting the sensory data) dissolves in hydrochloric acid."

So again, "This thing (four legs, small, and the various sensory data of 'dog') bit me when I hit it."

This thing (ditto) bit me when I hit it.

This thing (ditto) bit me when I hit it.

Therefore all things of such sensory data bite me when I hit them.

This may be analysed more carefully. The mere fact that dogs bite when hit is of no interest. The real meaning of the statement is, Put those sensory data to the class of Biters, and "Biters" has as its central reaction, "Do not hit." In other words, that group of sensory data is by a process of experiment assimilated to the reaction "Do not hit," or positively, "Treat gently." The final result is a group of memories of sensory data, or memories of stimuli, many very different in detail, grouped round a reaction which is found successful towards each of them.

Consider the other point of view—that the class consists in sensory resemblance. Surely a sheep dog resembles a sheep far more than it resembles any other dog. Surely it is absurd to suppose that we call it a dog on the basis of its appearance. We call it a dog on the basis of what it does : it behaves like a dog, and it must be treated like a dog. Suppose we omitted or altered all the sensory characteristics of a dog and dressed it up like a sheep, but left the nature of a dog, then we should call that a dog in sheep's clothing. If, as wizards, we transformed the sensory data of a sheep into a dog, we should call it a metamorphosed dog. So when the prince is turned into a frog in the fairy-tale, we consider him still as prince. But when a frog is turned into a prince, we consider him still a frog. Presumably not one of the original sensory data remains. This is of considerable psychological importance. Clearly the basis of classification and the aim of thought is the motor reaction. Induction is a process of grouping many stimuli round one reaction, or of adapting one reaction to many stimuli.

Deduction. The deduction which might form the sequel of the above induction would be

“All dogs are biters.

This is a dog ;

∴ This is a biter.”

We have shown that “biter” does not represent a group of sensations ; it represents an attitude, meaning “a thing to be treated as a biter.” To what then does “dogs” refer ? To the memories of past stimuli to which that attitude was appropriate, and “This” refers to a particular present sensory stimulus found to correspond more or less with the previous sensory stimuli, and hence assimilated to their reaction. It is a guess on the basis of appearance.

Consider here again a piece of sensory reasoning. It seems in some way unsatisfactory. It gives one the feeling of stating a useless platitude, of leading to nothing, rather of being an argument *in circulo*

and leading back to what it started from. For example :

“ All cabbages are green.

This is a cabbage ;

∴ This is green.”

The syllogism is purposeless and meaningless. The purpose of a syllogism is to assimilate a particular new stimulus to a previous reaction. “ I used my x reaction for A , B , and C . D looks like A , B , and C . ∴ I shall act to D as I acted to A , B , and C .”

Apperception. Apperception has been made the basis of a science of pedagogy. The aim of that pedagogy has been the acquisition of ideas. Ideas have been acquired as being the materials of knowledge and of thought.

Apperception is defined as the process of taking in by means of previous knowledge. The previous knowledge whereby the new fact is “ apperceived ” is called the “ apperceptive mass.”

The Herbartian steps are based upon this theory of apperception. These steps are

Stimulus	{	1. Preparation (whereby ideas are called up in readiness to form an apperceptive mass).
		2. Presentation (of new ideas which are assimilated by means of the apperceptive mass).
Assimilation to a class	{	3. Comparison (these ideas are compared amongst themselves and with previous ideas).
		4. Abstraction (some general principles are drawn from them).
Action	{	5. Application (the principles are utilised in some particular practical case).

The “ apperceptive mass ” and the theory of apperception is another way of stating the method whereby we receive sensory stimuli. Sensations of four-legged shape, furry appearance, and large eyes come to me.

These few sensations are supplemented or filled out by memories of the rest of the sensations which comprise the unit. A few sensations come into the mind, of four legs, eyes; these sensations are assimilated at once to a certain class; they are interpreted and filled in as "cat," and a suitable reaction follows. This is the process of Stimulus, Possible classes, Action. The few sensations gain meaning by being put in a class. What is intended by "meaning"? A thing has meaning when it involves a reaction. A thing which has no meaning is a thing which does not affect our actions. We do not understand the "meaning" of a thing when we do not know how to react to it.

Is knowledge the aim of the mind in apperception? If it were so the mind would acquire all the sensory data possible. Whereas we perceive only the very smallest part of an object and supply the rest. It is true to say that the mind gets along with as few sensations as possible. It is always guessing. Only when we think we see a man in full detail, and find it only a shadow, do we realise how much the mind normally supplies. What does it supply? Why do we apperceive only in virtue of what we have apperceived? Is this statement correct? We apperceive only in virtue of the classification of the stimulus. Apperception is understanding the meaning of a thing. We understand the meaning of a thing when it is put into a class—not because it has had other sensory ideas added to it, but because it has had a reaction added to it; it has a bearing on our action; the nervous whole is complete. That completion is "Meaning."

Hence the reason why we get along with so few sensations. We take just enough sensations to classify the thing. Merely a few of the main sensations which bear upon action are selected. On the basis of these the stimulus is put into the class, and thereby acquires Meaning.

The Herbartian Steps. If, then, we apperceive for

action not for the sake of general ideas, several changes must be made in the Herbartian steps if they are to correspond with reality.

The step Preparation is meaningless in its ordinary use. Questions as to what my father goes to office in do not prepare me to apperceive a motor car. Nor yet does it remind me of a previous lesson. Only one thing can summon up the germane ideas, namely, a call for action. The desire to build a motor car will make me perceive. In fact, the beginning of every thought is a demand for action. The beginning of every lesson should be the same: "What shall I do?"

Presentation has meaning only in virtue of that summons. The summons to action automatically calls into my mind all that bears on the problem; moreover, the mind is ready to assimilate all further knowledge which bears on the question. Lessons, lectures, sermons are "dull," are difficult to remember, are hard to attend to because they are not what the mind was built to attend to. They do not affect action. The first step then is a problem of action. The second step is the acquiring of information which will teach the child how to act. This information leads to a range of possible actions, the probable effects of each of which will be considered. One eventually is chosen.

The end of the lesson is action. Skill is the correlate of knowledge. Ideally that action should be real. The more real it is the greater will be the permanency and value of the previous process. In some cases, however, we think for an action which never takes place: perhaps an accident prevents it: perhaps we think out how to do a thing and get someone else to do it for us. Perhaps we think out how to do a thing in view of the probability that we may be called on to do it.

Not every lesson in the school course can be carried into actual immediate practice. Better if it could be.

For only so has a piece of thinking a proper motive and ultimate test. Only so is it a complete unit of knowledge and motor ability. But in every case the lesson should start from a problem of action: the ultimate action may be one which will have to be performed later. Every lesson should teach the child how to do something—something which he *knows* he will have to do in later life. The child should feel that he is actually learning to meet the problems of life: he is learning (or rather *learning how to learn*) how to do.

The Division of the Subjects. Several causes have kept back the realisation of this ideal.

1. The energy of the schoolmaster.
2. His esoteric tendency.
3. The knowledge fallacy, and the division of subjects.

The first has had most effect. It underlies the other two. The teacher cannot be content to sit still. He must teach. He must drive. Hence instead of calling for activity from the child he spends most of his time thrusting it back. Hence instead of setting the children a problem of doing, and leaving them to do as much of the solution as possible, he makes them mute witnesses of his thoughts.

Secondly, instead of letting the child see how he is preparing himself for life, the schoolmaster keeps the aim of his lesson a mysterious secret, and makes work on the part of his class impossible.

Thirdly, man is superior to the animals because of that pause between stimulus and action. In that pause is thought. The child is nearer to the animal: he tends to react without thought. Education aims at developing thought, at teaching the child to pause and act intellectually. But man has been so pleased with his instrument of intellect that he has cultivated it for itself. He thinks for thinking. He falls into the idea that the aim of education is not the introduction of thought between stimulus and reaction but the culti-

vation of thought itself. Instead of lengthening the pause between stimulus and action, so that action may be more suitable and more complex, he has protracted it to infinity. Action never comes. The child learns merely to think.

CHAPTER X.

THE TECHNICAL SUBJECTS.

The Application of Psychological Principles. If we wish to apply the principles suggested in previous chapters, three main practical aims must be before us.

1. That all knowledge shall be taught for the purpose of application. Every subject must teach an activity, and every lesson must lead to an act.
2. We must aim not at teaching but at self-education. The aim of the schoolmaster must be not instruction but teaching children how to learn.
3. We must aim not at uniformity but at differentiation and specialisation.

The Lesson. The plan of the lesson has already been suggested. It consists in (1) The setting of a problem to the class. This problem is always in the form : "How can I do ——" We do not ask, "What is the nature of a river ?" or "What are the industries of India ?" but we ask, "What can you do with the fall of water ? In what way can you utilise it ?" or "Putting yourself in the place of an English Commercial firm what will you export to — part of India ? How will you do it ? What will you import from India ?"

The master will not teach the answer to the question. He will suggest how to get the answer to the question. He will indicate how that question must be studied.

It may have to be divided into many different sections. Sources of information will be recommended and provided on each section. Special detailed problems will be noted.

The second step is performed entirely by the pupils. It is individual study.

The process is not complete without a third step. After all these problems have been studied, the course of action resolved on will whenever possible be carried into practice. We cannot, for example, set up a Niagara power station. But having studied the subject of water power we can do a good deal of the mathematics, of the designing, of the drawing, and end up at least with a small working model and an intelligent inspection of the real thing. By "intelligent inspection" we mean an inspection which aims at learning how to work the machine.

The test of the lesson is not an examination paper on knowledge. The test is capability to do. If the child can draw you out a plan, or interpret a plan, can make or can manage the machine, he has achieved the aim to which knowledge is only relative. We aim not at facts but at powers.

The Subject. The present division of subjects in the school is clearly a division of knowledge. It is not always that, it is sometimes an arbitrary division of concrete things: rivers are geography and kings are history.

A division of knowledge is a purely artificial division. A shopkeeper in his day's work does geography, arithmetic, English composition, "manual work," and every subject in the time-table. Everything we do involves nearly every school subject. It involves all the ideas which bear on that problem of doing. These facts have been classified in an arbitrary manner; that classification has nothing to do with the mind. The only classification which the mind employs is the grouping of facts, which bear on a problem of action, round that problem of action. If I have before me a case of goods

to send off to Bombay I remember all that is relative to the question, geography, arithmetic, law, and a hundred other facts which are unclassifiable. Indeed, most of the facts—*e.g.* the elements of railway management, of custom rules, of methods of packing to protect from chemical changes, from insects, from heat, etc.—are unclassifiable. Hence they are not taught in the school. The school is kept narrow and unpractical and out of date, because its subject headings will not admit modern practical knowledge. The knowledge does not receive the test of practice, and hence there is no force to bring it up to date.

The facts are classified by the mind according to practical needs. Moreover, they are perceived by the mind according to the practical needs. There is no one thing a River. To an engineer it is water power; to an artist it is a subject for a picture; to commerce it is a means of transport; to a soldier it is a natural defence; to a doctor it is an insect breeding-ground. Each of these different persons requires a totally different set of facts, and these facts from a totally different aspect. The engineer's knowledge is useless to the doctor. The commercial man's knowledge is useless to the engineer. Moreover, each of these persons remembers the facts in view of the activities on which they bear. They are grouped round and attached to those activities by his mind. Unattached facts of no bearing cannot be remembered. An engineer could absorb a set of facts on water power in a few minutes: his mind, as it were, has magnets which attract these facts. Those magnets are his practical active needs. A doctor would take weeks to absorb the same facts. They would be meaningless: they would find no attraction in his work.

Hence in teaching geography as geography we are teaching it without an aspect. That is to say, we are teaching facts which have no "meaning." If these facts are required in practical life they have to be learned over again from the new aspect. Moreover,

we are teaching something which cannot be and ought not to be remembered at all.

There is only one classification of facts, and that is by activities, the activities on which they bear. We can only divide the school time-table on one basis—that of the different activities of life.

The Activities of Life. These activities are the provision of Food, Clothing, Housing, Family Duties, Protection of Health, Civic Duties, Play. Each of these activities embraces not only every school subject but every science. The sciences arose originally out of these activities. Chemistry originally was man's endeavour to provide food and health. The modern pure science of Chemistry is an abstraction from that. It provides facts which others use in many ways. It is the work of a specialist. Special knowledge is not for the ordinary child. To know Chemistry is not to know its applications. The chemist himself does not know them. Nor does the man who applies these facts know how they were obtained. The child needs not all Chemistry, but just what bears on his activities and from that aspect.

The Ideal Method. We may divide these activities into three groups. First, technical subjects which aim at the provision of the necessities of life. These will include knowledge of the ways in which food is obtained. In the lowest classes the means must be taught in a simple form—the fundamentals of agriculture and farming. So, too, the fundamentals of the provision of clothes, and of houses, the fundamentals of hygiene. As these subjects develop each becomes larger and more complex. Moreover, as the child develops, his special powers become more and more clearly defined. In the lowest classes the child learns the broad basis of the Technical subjects; as he goes up the school, and as the subjects separate into more and more complex branches he specialises more and more, until he is eventually fitted for one duty in life with his special powers fully developed and fully known.

Secondly, the school should form in the child the habit of employing his leisure time in a profitable manner. It would do this by giving him a wide range of choice amongst the various arts and leisure subjects. It should teach him these arts not as examination subjects: but it should show him how to occupy himself in these arts, how to study literature, how to paint or draw, or, on the other side, pure science or unapplied mathematics, or history as a leisure occupation.

Thirdly, the school should teach to all children alike knowledge of the organisation of the society in which they live, the rights they receive from it, and the duties which they owe to it. It should teach to all the facts of political and municipal organisation. At the end the boy will come out with a full and intelligent knowledge of the social problems of the day, capable of doing and anxious to do his part in solving them.

The School as an Instrument of Specialisation. Clearly the first two items in this course involve a very high degree of specialisation in the school. How is it possible in a large school to have every boy doing a different course? On the other side, we might ask how is it that an education for the highly specialised and highly differentiated duties of life can treat five hundred boys, each of invaluable different capacities, as if they were one—and wantonly stunt their different powers so as to produce uniformity?

The difficulty lies simply in this—that we assume that the school is a teaching institution where thirty boys listen to one teacher. Whereas the school should be a studying institution. There is no limit to the number of subjects or courses which a correspondence College may teach. Why? Because by the fortunate circumstances of its work it is restrained from the act of oral instruction. It can only plan courses of studies and direct work. Consequently, its students are allowed to have individuality, and instead of being taught are shown how to learn. If this can be done

by correspondence it can be done in an established school, and more effectively for the presence of a library apparatus and direct supervision.

Hence we have an initial general course, with successive specialisations into a wider and wider range of narrower and narrower subjects. The man needed by society is a man who knows all practical things in a general way and one very small thing in detail. That is the man whom such an education would produce.

The Limitation of Education. Such schools would be most like the present industrial or technical school; the range of subjects would be limited in each case by the range of the industrial activities of the district.

The lower stages of the school would be practically the industrial school as at present, teaching the broad facts and the elementary trades. Only boys of higher ability would reach the more specialised branches in the Technical school. But those who did reach the school would be boys who knew their subject up from the bases, and had further a foundation of practical workmanship and self-dependence instilled from childhood. Whereas the others, of less ability, go out to the world equipped for a livelihood, capable of using their spare time and knowing the elements of social duty.

The scheme is Utopian. But in one sense it is not far from reality. The first school is merely an industrial school slightly developed in the range of its work to deal with a higher average of intelligence. The second is a technical school whose work is able to be of a higher standard owing to the better previous equipment of its scholars.

On the other hand, consider the negative aspect. No doubt such a school would be developed independently. Organise an existing industrial school for normal children; correlate it with an existing School of Technicology and we have the ideal—an ideal which I have developed at greater detail in a later chapter. But the other schools? The elementary and the secondary—as they are now. What of them?

Personally, I should say rather a small good education turning out a few capable men per year than the dangers of the education round us. On the other hand, can something be done in the actual present ?

Examinations. In the first place as teachers, ordinary teachers in ordinary schools, we can do something. We can use a lesson plan somewhat on the lines suggested. We can set problems and set the children to study them, then let them submit a report. Afterwards we can arrange some simple practical work. At least the children are doing something for themselves. That is less deadening than being taught—being “taught” instead of made to study.

We can try to make gold out of straw : we are burdened with the shackles of examinations. Let us meet this problem frankly. If we try to combine our ideals with teaching for examinations, our ideals suffer—and so do the examinations. That is a serious matter. So much depends on examinations. The boy's after-life depends on examinations. Above all the boy must pass these examinations if they are there. Let us be frank with ourselves ; practical knowledge, even scholarly knowledge and examinations have little in common. It is a little—shall we say “humbug” ?—that we keep up when we say that cramming is bad. The methods of the crammer are the best way of passing an examination. They are devised for that purpose. If they were not the best way, crammers would not exist.

What is cramming ? It is the psychologically right way of passing examinations. We remember as we learn. If I learn to speak a thing—I remember it for speaking, not for writing. If I learn to answer individual questions in a thing, I remember it for individual questions ; I cannot give a continuous account. If we want to remember for examinations, we must learn for examinations. The main thing is this—the secret of the crammer lies in preparing

ready-made answers beforehand ; in having the facts ready selected and arranged in answers. There are many methods of preparing for examinations, many little tips. Surely the most useful thing we can do is to say to ourselves flatly, "This examination business is not education ; it cannot be made into education. These boys have got to pass examinations. What more useful thing can I do than get over the examination work as rapidly and effectively as possible ?" Teach them how to pass examinations—a most useful accomplishment for after-life. Let them know it is not education. And when the examination work is over let us do the education untrammelled.

The Active Aspect. If once the ground can be cleared of the examination, room can be found for a method of instruction which aims (1) at teaching the boys to learn ; (2) at teaching them to learn how to do.

A definite list of subjects is prescribed, and that list of subjects has to be taught. But we may approach them from the active aspect. Thus we may approach arithmetic from the business side ; let the boy put himself in the place of a small business ; the accounts must be kept, invoices and receipts sent out ; there are stock exchange transactions, bills to be discounted. It is one thing to set these as sums out of a book. It is another to say, "Suppose you were put to manage a small business to-morrow, what would you have to do ?" The work is real, for the boys' fathers are doing it, and their big brothers are doing it, and they know that they themselves will have to do it. Not only that, but it is more complete and more practical. So long as we teach mere book work, we do not know how to select : if we set the child to learn, he selects ; and if we put ourselves in his place as a learner, we know what to give him to select from. The keeping of the stamp accounts, the use of codes, the telephone book, not to mention the writing of business letters never appeared in any arithmetic book, yet they are integral parts of the science of money transactions.

Another part of arithmetic is approached from the side of carpentry and building construction.

So again Geometry vanishes into surveying. Geography in the lower classes consists in simple stories of travel. Real geography is far too difficult for them. Most of us have learned far more of the world around us from missionary lectures than from school. All we aim at in the earlier stages is the realisation of other very different people living in very different lands and having very different needs from ours. This is a liberal subject.

Later, it becomes commerce. What are the needs of these peoples? And what are our needs from them? Let us put ourselves in the place of a commercial house. We are not theoretic. The whole process must be gone through, buying, packing, shipping, customs, selling; the bills of lading must be made out, market prices must be watched. There must be no esoteric training. The boys must be working of their own impetus, practically preparing themselves as if they had to enter a commercial house at the end of the school course.

Will they work? Most certainly yes. A boy is of all beings the most practically minded. He is only too ready to think, "What is the use of this? In what way will it help me in after-life." Every healthy boy is ambitious—if we allow him to be. He will work if he sees the bearing. Just because he does not see the bearing, because we will not allow him to, the teacher has been compelled to invent systems of marks—and of caning.

It is just as easy to start from the problem how to light a country house or how to run a tramcar as it is to present miscellaneous facts of pure electricity. So too with chemistry, it is the chemistry of practical life, of industry and of the home that the boy can appreciate. Each lesson starts from a practical question asking the boy to devise something, and it ends with the work of devising. We do not ask him

to re-discover something discovered long ago. The preposterousness of this is in most cases more apparent to the class than it is to the teacher who is blinded by his esoteric theories. We ask the boy to pick out from books what is needed, to adapt it and to apply it to the problem in hand.

The Course Unit and the Lesson Unit. How is it possible to devise a course on these lines? If we had a free hand, very possible. But we have not a free hand—yet. I endeavour to suggest it in the practical résumé of the last chapter of this book. All we can do under existing conditions is to take the course laid down, and, selecting pieces, see what practical problem they bear on, present that problem to the class and work from that aspect.

Let the teacher beware of the pseudo problem. He talks of business and then sets arithmetical questions. He will not go off into full details, including letter writing, book-keeping, etc. "This is Arithmetic; I must keep to the point." The criticism of the class is: "He is making us do arithmetic under false pretences: another of these obvious sugared pills!" The problem must be dealt with completely. It must not be a specious pretence.

The teacher will deal with it completely if he learns to think in sets of lessons instead of in subjects, these sets of lessons exhausting a practical problem.

Makeshift. Undoubtedly the above is a hard counsel. It involves the co-ordination of two things almost incompatible, a fixed course based on an analysis of knowledge, and a practical course preparing for life. All that the teacher does must be a makeshift. But he at least can endeavour to do this—to teach his class to learn, and for that purpose set before them problems as practical as possible.

He will at least be living up to an ideal, the ideal of the day when education becomes an aid to individual, national, and even racial development, instead of a hindrance.

PART III.

CHAPTER XI.

IMAGINATION.

The Meaning of "Imagination." Memory recalls something which has actually taken place : Imagination is a chain of ideas which may include combinations which have never taken place and never could take place. By Memory I recall the actual fact that I went to the Stores yesterday : by Imagination I may produce the idea of going to the Stores to-morrow, an event which has not taken place, or of flying up unaided to the roof of the Stores, an event which could not take place. Thus Memory recalls something which has actually happened : Imagination evolves something which has not happened.

Again, in Imagination there is no belief. When I remember that I went to the Stores yesterday I believe in the fact. When I imagine going to the Stores I have not belief in it as a fact. So, too, when I remember a certain horse I believe in it ; but I do not believe in my imaginations of a hypogriffin, for example.

So, too, in contrasting Imagination with Thought. Briefly, in the process of Thought I meet a problem, and the memories which constitute my experience insert themselves into my consciousness so as to guide my action. Thus my environment presents to me the problem of getting to the railway station. Memories of my past experience suggest Walk, Run, Tram, Taxi-Cab. One of these solutions is fitted in with the circumstances. Every step of this involves belief. It

involves belief in the train and in the railway station as realities, in the desire to get there, in the existence of legs, trams, and the taxi-cabs.

What is meant by Belief? If I do not believe in the motor car which I see approaching me, what difference will it make?—That I shall not get out of the way. If I do not believe in your recipe for making a pudding, I shall not act upon it. If I do not believe in human justice, I shall not shape my conduct so as to allow for its existence. Belief means *readiness to act on*. And Truth? We may suppose Worthiness to be acted on.

Contrast imagination with the above process. I imagine a hypogriffin and debate how to kill it. I imagine a journey to the Andaman Islands and debate how to get back. Here we have the same steps: a problem, past experiences, and a decision to act. But I do not believe in the problems as actual: that is, I do not believe in them as likely to affect my real action. I may make up my mind that in the particular case I should row back, or motor-boat, or sail. But as I do not believe in the problem I shall not believe in the solutions, I have only a *relative* belief in them as possible were those conditions actual. So, too, with regard to the final solution selected, the course of action determined upon. I do not believe in the problem: I do not believe that I am in the Andamans: hence I do not believe in the decision to sail back. The belief is a reserved belief: were I in that situation I should act in that way.

Hence the real difference lies in this, that in thought I do finally *act*: in imagination I do not finally act: and I know that I shall not act.

In a word, Imagination is the free running of thought apart from objective reality. Objective reality is the stimulus to action. Imagination is the free running of thought apart from the objective needs of action.

Imagination is built up of just the same ideas as those which are put together in life as a guide for our

conduct. We cannot invent out of space. Everything that we think can only be an old or new combination of things we have already experienced. We have never seen a green cow. But we have seen green : and we have seen a cow. It would be a totally different thing if some one were to think of a totally new colour not compounded of any of the existing colours nor in any way like them. Hence, fundamentally, Imagination and Thought are alike. Both consist in the flow of memory-ideas, in the one case selected for real action, in the other not selected for real action, perhaps not selected at all.

The Imaginative Man. Imagination is used in common speech in two different ways. On the one hand, we hear speak of "the Imaginative man" in the sense of praise, as a man who goes beyond others and makes great and valuable discoveries, the original man who always seems to think of the one obvious solution which no one else reached. On the other hand, we hear of the Imaginative man as a dreamer, an abstract being living in a world of unreality. In the one case the word means a person with a genius for original action, a Thomas Edison. In the other case, it means a person with an incurable tendency to inaction.

One would be inclined at first to say, "Oh, it is only common speech." This is a very usual scientific attitude. It is a very wrong attitude—most of all in psychology and in education. "Common speech" tells something which all human beings instinctively recognise. It tells of something as fundamental as a law of nature, something that is in us, a quality of mind itself. It must, therefore, be the starting point of the psychologist : it is his duty not to despise it, but very humbly to enquire what truth it veils.

We said that thought consists in the insertion of the memories of past experience into the pause between stimulus and action. On the length of that pause will very largely depend the quality of the thought. Where

there is no pause thought is at zero ; intellect is in the lowest animal stage. The greater the pause between stimulus and action the more distant the planning, the more far-seeing the conduct, and the more lofty the being. But at a certain stage that pause lengthens out into delay : thought from being a means becomes an end ; ideas flow, but not for action. The call of the world for action evaporates in deliberation.

Clearly from this the Imaginative man in the good sense is the man in whom the pause between stimulus and action is sufficient and well filled. The Imaginative man in the bad sense, the dreamer, is the man in whom that pause has lengthened out into eternity. The action never comes. Imagination was defined as thought independent of the needs of action : the dreamer, the "imaginative man" in the technical sense, is one who thinks apart from active needs instead of merely delaying the action so as to think.

The Schoolmaster's Attitude. What is the ideal of the schoolmaster in this connection ? No doubt the criticism which will be raised against many of the arguments in this book is that the author wishes to make Education purely utilitarian, that he cuts out all art and all higher ideals from life. This is not the case. The very essence of man's intellectual superiority lies in this, that he does not respond directly to stimulus, that he can delay action and think in a foresighted manner independently of the immediate urgent need. Education consists in helping the child to do this. Indeed the ideal of the school is the Imaginative child—in the first sense of the phrase. The point which we wish to emphasise is that the education now being given is an education which omits the final action altogether, a purely imaginative education of the second type.

The Cultivation of the Original Mind. The cultivation of the first type of imagination, the desirable type, is the whole problem of education to which this whole book can only hint a partial answer. No par-

ticular school subject can be suggested as "cultivating the Imagination." Nor yet any particular positive method. To a certain extent, no doubt, the quality is innate; but in all it is capable of cultivation. It is largely destroyed by the school because:

1. The schoolmaster by giving unapplied knowledge encourages the dreamer.
2. Where an actual problem is set, the schoolmaster sets one always which has a right and a wrong; or at any rate assumes one answer alone as right. His skill consists, according to books of "Method," in "leading" the children to that answer; in cutting short the "Heuristic process."

The true heuristic process lies neither in dexterous questioning of a class and eliciting a foregone reply: nor yet does it consist in turning children loose into science laboratories. It consists in teaching children how to study with originality. The "shortening" process consists not in pulling them out of mistakes, nor yet in putting up danger signals, but in teaching them how to look out for mistakes, how to avoid them, how to detect them.

The school does not do this. It drives sheep through a gate.

Imagination consists in a lonely sheep finding its way where there are many gates.

The true lesson plan for producing the original child should therefore be--

1. The supplying of a problem.
2. The supplying the materials for solving it.
3. *Teaching how to use these materials.*
4. Criticism not merely of the result of research but of the manner of research, and allowing that many solutions may be correct. The best is perhaps the least foreseen.

If a child believes in destruction of energy or in a flat world, the fault and the danger lies not in the wrong fact, but in the wrong method of study which

has produced that wrong fact. A child may believe what he pleases so long as he has valid reasons. Wrong beliefs show invalid reasons. The teacher's duty is not to teach him beliefs, but how to reach beliefs.

Free Imagination. We indicate the second form of Imagination, that which does not lead to action, by the term "Free Imagination." This Free Imagination is of two kinds, Discursive and Constructive. Discursive Free Imagination is found in idle thoughts, dreams, "brown-study." It is a mere sequence of ideas at random, not leading to any definite, if even imaginary goal. In Constructive Free Imagination the problem is fictitious, it may even be preposterous: but the thought revolves round a definite centre. The fundamental difference between the two kinds lies in the factor of selection. Discursive Imagination has no selection: Constructive Free Imagination is selected though not for a real need.

Discursive Imagination is nowhere desirable. In fact, it is the chief enemy of the schoolmaster, especially of the teacher of literature. The difference between bad literature and good is the difference between Discursive and Constructive Free Imagination.

Sensationalism is a series of disconnected adventures; its chief quality is profusion. Good literature is built up round a centre: it is a Construction, not a Sequence.

The presence of Free Discursive Imagination is a sign of something wrong. It is a sign either of imperfect development, or of physical fatigue, or of absence of proper active stimuli to direct the course of thought. In a child it is due mainly to the first and last causes. Whenever such day-dreaming is found in a boy the schoolmaster should take it as a warning; he must assume at once that this boy is not finding a proper or sufficient objective outlet for his activities. He is running to seed. If the boy is of adolescent age the dangers are very considerable, both mental and moral. Even in a mere child a habit

has been learned which is unlikely to be eradicated in after-life, a habit which will sap energies and misdirect them ; a habit which makes idleness and unpracticalness not merely possible but pleasurable.

The Place of Constructive Free Imagination. A child has a prolific "Free Imagination." To a certain extent it is of that discursive kind which we have seen to be of little practical utility. As the child grows older his imagination becomes more constructive: he imagines stories and situations. Does this imagination serve any valuable purpose in preparation for life ?

Take, for example, a boy's imaginative tale of adventure in the backwoods. This is ideation which does not respond to a real stimulus, nor yet does it result in action. Its tendency is, therefore, to weaken the selective check upon the flow of memory images, to separate the individual from his environment and place him in a subjective world cutting him off from a responsive contact with the real, to encourage the dissipation of a stimulus into unproductive thought. In fact, the general tendency is to produce the Dreamer.

No normal child, unless physically tired, would listen to stories of soldiers if there were an opportunity of playing at soldiers. Imagination is made to supply the defects of life. Dreams, insanity, and hysteria are, according to Freud, the breaking through of suppressed tendencies which have not found sufficient expression in life. Thus the child's prolific imagination is due partly to organic defect. It is due also, perhaps more so, to sheer lack of opportunity for motor self-expression. Things which are too big for play, or for which there are no materials, or which are prevented by some adult mandate are embodied in dreams and words. If the thing could be done actually, there would be no story. It is said that children always act their stories if they are given a chance. At least, from the adult point of view it is called acting: hence the child's dramatic

reputation, and hence the "Dramatic Method of Teaching." But, as a matter of fact, it may be doubted if the children think of the thing as acting at all. In "acting a story," the story is one thing and the acting is something added. Supposing I "acted" the teaching of a class, I should have in my mind the teaching of a class, and I should give a representation of it to an audience. If, however, I take a class in reality, there is no such dualism. I am doing the actual thing. So, too, with the child's acting. They are doing the actual story. They are doing it very imperfectly because of the absence of real conditions. The conditions are unreal not because they are deliberately giving an artistic performance, but because they are the nearest they can get to reality.

Would a child prefer to have real conditions if he could get them? Unquestionably yes. He plays at gardening on the nursery carpet because he does not possess a garden, or because it is raining and he cannot go to it. If, again, he were too tired to play at gardening on the carpet he would merely make up stories of gardening. In fact, he is an organism built for action, and the nearer to real action he can get, the better pleased.

A child tells stories because he cannot play: and he plays because he cannot work.

The Absence of Opportunity. He cannot work because he lacks opportunity. This lack of opportunity is due to three causes:

1. The child is physically unfit to participate immediately in the work of man. He has not the strength.
2. The child is mentally unfit to participate immediately in real activities. He has not the experience.
3. The child has not the stimuli to action nor yet the materials for meeting those stimuli.

For these reasons a kitten plays at imaginary hunting; he carries out activities on an imaginative hypothesis

because the actual problem would be too difficult or too dangerous, or because it does not come in his way.

Can these disadvantages be eliminated? The elimination of these is the *raison d'être* of the school. The school aims at supplying a wider range of stimuli than life could safely supply: at the same time, the course is carefully graded so that the problem is not beyond the child's physical or mental powers. This is the ideal. How many schools actually attempt this would be hard to say. Just because the problem is difficult the problem has been avoided by means of a specious doctrine of faculties and "general training."

Thus stories and unrealistic play are not natural to the child wherever reality is possible. Too often, when reality is actually possible, the child is given unnecessary pretence. No child will ride a hobby-horse if he has a real horse, nor play shop if he is sent shopping. All these games are signs of a child *protected from learning* in the nursery, deliberately deprived of experience and of action, we know not for what reason!

An ideal school course would be a complete substitute for play; it would go beyond it. How much may be done towards the realisation of this ideal can be seen in the Industrial Schools and the George Junior Republic. But these tend to cover only one side of life—the industrial. A child needs experience of every side of life. In a graded danger-proof microcosm he plays at life.

Here we have the real meaning of play. It is not the doing of something useless, not the doing of something different from work. It is the doing of work from a different aspect. A man has energy not equal to the demands made on him. He aims, therefore, at achieving the maximum effect with the minimum of energy. That is work. Play consists in doing a thing with the fullest energy possible as a thing of value in itself. A child lives for the sake of living,

and he desires to live a life as full, as wide, as like to the real as possible. This is his method of preparing for life.

Art and Imagination. Yet the adult man has always some nervous energy above the needs of his everyday life.

The muscular system becomes fatigued long before the nervous system. Man's nervous energy is greater than his physical energy: he has more thought than he can carry into action. In this discrepancy art finds its psychological basis.

If the school is to be a complete preparation for life it must provide for not only the employment of nervous energy for the purposes of action, but also for the expenditure of that surplus balance above the power of action.

This energy must be expended in the most profitable way. Work-energy is expended on the necessities of existence: in many cases the primary steps to this end are unpleasant. Play-energy is expended irrespective of ultimate effect so as to produce pleasure in the primary stages. Part of this energy is expended on activities which produce pleasure alone and practically no further effects at all, such, for example, as a very simple game involving neither thought, skill, nor strength. Some activities have ultimate bad effects; others have ultimate good effects in the production of skill or muscular strength. In each case the results, good or bad, are secondary matters to the child. The primary reason for expenditure of energy in the activity is immediate pleasure. It is the teacher's duty to form in the children the habit of expending their surplus energies in activities which produce ultimate profit.

Some of this surplus energy is expended in purely mental occupations. The ultimate value to be derived from these will be twofold.

1. The acquisition of ideas of no immediate value for action but of probable future value. Cer-

tain extremely complex situations arise in the life of each of us calling for immediate action. Full thought necessary for a reasonable decision would take long, too long to be done extempore. We know that such a situation is likely to occur: we consider our reaction beforehand as a chance investment. Conduct in the face of one's own danger, in the face of another's danger, in the face of insult, in the presence of death, of another's sorrow or disgrace, all these are problems which cannot be decided on the spur of the moment: all these, moreover, are situations in which we are very largely influenced by our leisure use of thought not for immediate needs. One cannot but notice in everyday life how persons tend to fall back upon fiction in any unusual emergency. Condolences and heroics are modified from novels. "Women and children first" is a literary ideal fiction which rushes up to the mind as a solution of an otherwise unprecedented situation. In such circumstances there is not time to evolve an attitude: the attitude must have been ready made beforehand.

2. Secondly, such thought free of action is of value in the formation of a general attitude to life which affects all conduct rather than conduct in any particular situation. A man who thinks always for action tends to lack unified purpose and a wide comprehensive view. A philosophy of life is a product of the armchair. It bears ultimately on life and bears extremely directly, but at the moment of its creation it is thought free from any objective need.

Such thought must be clearly distinguished from mysticism and self-absorption. The free thought of a healthy man is still objective; it bears on life even if it does not bear on any one portion of it. Free

thought supplies a wider outlook on the problem of living ; but it is not abstracted altogether from the problem. The pause between stimulus and action is a very long one, but action comes eventually. Such thought is the product of the right employment of leisure.

CHAPTER XII.

THE LIBERAL SUBJECTS.

The Place of the Liberal Subjects. There are in addition to the technical subjects certain subjects which aim especially at teaching the child to use his leisure time well in his future life. Certain subjects, arithmetic, technical science, accurate speech, are essential for daily well-being. These are the school's preparation for the day's work. Certain subjects, such as pure science, literature, are the school's preparation for the holidays or the evening's play.

The attitude in these two aspects of a subject is widely different. In technical history the child is taught to do something which he will have to do later on: he is taught to perform his duties as a citizen. "Liberal" history aims primarily at individual pleasure; it will deal with battles, sieges, social life, or whatever is of an inherent interest. The value is incidental; such as it is it will lie in the formation of an attitude towards certain complex situations not yet experienced in reality.

To some boys, to boys of the highest social grade these subjects are part of the technical equipment for certain professions. To other children their sole value is pleasure.

It follows from this statement that the teaching of these subjects must aim above all at pleasure. Anything of whatever value which detracts from that pleasure must be rejected. If our aim is to encourage

children to study literature in their spare time in after-life, the use of notes and philological explanations in the teaching is an obvious error. First, such additions do not add to the pleasure of the child ; second, they are not the sort of thing which he would tend to study in leisure time. Moreover, in technical subjects which are of inherent value, the master may *teach* the class : but here, if the class does not learn of its own accord, the whole aim is vitiated.

Lastly, room must be allowed for option. In exchange for the technical work of life we are given something—namely, livelihood. For the Liberal activities we receive nothing. Livelihood, viz. food, clothing, etc., is in the hands of other men, of society : society as provider has a claim to dictate the nature of the work. But where society does not so compensate, the choice of the activity lies with the doer—so long as it is not detrimental to his social activities.

Further, if an education is being given by society, society has no obligation to provide teaching in Liberal subjects, or provides it only so that those subjects be beneficial to the individual's social work ; but there must be an option among such "beneficial subjects." For in the case of the Technical subject society can make certain of the performance of the work by withholding its equivalent, but in the case of the Liberal study there is no means of control : the only means by which pursuance of the study can be ensured is by courting the willingness of the individual, by making the study pleasurable.

Not all of us use leisure moments in the same way ; not all express ourselves in the same way. It is, therefore, as important to discover what the child *wants* to do in the Liberal subjects as it is to discover what *wants* doing (that he can do) in the Technical subjects.

Not only must the teacher adopt the above attitude to the Liberal subjects in arranging his time-table, planning

his lessons, and the rest, but he must get the children to adopt the attitude. He must get them to consider the Liberal subjects as something that comes after, as perhaps a higher thing, a wider and more spiritual outlook upon life, but as a thing dependent on our prior fulfilment of the demands of society. A world can be made of honest men ; a world cannot be made of poets.

Only in certain cases do we find the child who possesses undoubted genius in a particular Liberal subject. What is to be done in this case ? We would say this, that if the genius is real the world is ready to support one economically useless person for the sake of his Liberal gifts. We might, therefore, give such a child a purely Liberal education. At the same time, genius unallied with practical ability—the pathological genius of Lombroso—is fortunately rare. We should hesitate before describing any child as such, and still more should we hesitate before giving him an education which if it accentuates his gifts will also accentuate his weakness. The genius sacrifices his happiness and often his sanity in the cause of art. Except in the case of the very highest and best is such a sacrifice justified ?

Division of the Liberal Subjects. The Liberal subjects may be divided into two groups or rather two aspects, the Expressive and the Receptive. On the Expressive side we have Painting, Drawing, Composition of Music, Composition of Literature. On the Receptive side we have the seeing of works of art, the witnessing of drama, the hearing of music, reading of literature. Midway between the two aspects we have the acting of drama and the playing of music, a process partly receptive, partly expressive. It is best called "Re-expressive."

The Relation of Reception and Expression. Which is the more primary of these, reception or expression ? We consider the matter from the pedagogic aspect only. Art takes its rise in the existence of a surplus

balance of energy which we desire to spend. In other words, art takes its rise in the need of expression. The child wishes to give his energy relief. Perhaps, above all, he needs to give relief to these instincts which find least expression in life, the psychological forces pent up by civilisation.

We said that the aim was pleasure. The pleasure here consists in the relief given by expression. The statement has been made that all art is sexual. We would disagree. Art is the expression of a vital force of which sex is also a channel. Pleasure is sense of the power to express : it is the sense of living, for life is expression.

Reading is pleasure just in so far as it says what we wish to say. Pictures are pleasurable, music is pleasurable, just in so far as each expresses what we wish to express. But our pleasure in seeing is faint beside that of the artist who made. The highest pleasure—all pleasure—is self-expression. We observe the self-expression of other people either as a substitute for or as an aid to our own self-expression. Let us attempt to apply these few simple principles to the practical teaching of liberal subjects.

The Teaching of Literature. The fundamental aim must be self-expression. Hence the composition work not the reading is the centre of the literary course. By composition we mean the expression of thought and feeling. Style, handwriting, and spelling are subsidiary to that aim. Hence a boy improves his style so that he may better be able to say what he wishes to express, and so that his self-expression may be understood by others. He will improve his handwriting in order that his companions may be able to read his composition ; for this purpose he will make it as legible as possible consistently with rapidity. He will evolve a handwriting eminently adapted for life because it has been evolved in response to real need. So, too, with spelling, a boy will spell well because he

does not wish to mar a good composition by irritant blunders.

It may be said that this presupposes a very ideal boy. We do not suggest that a boy looks at the matter entirely from this standpoint. The boy wishes to tell his story with as little hindrance as possible from the difficulties of spelling and writing. He will write just so badly as he thinks people can read, and spell just so badly as he dares without being criticised. This is the way of the child because he lacks Ideal Construction: he cannot foresee an ideal in detail: hence he lacks the idea of workmanship, of finish and perfection. Consequently the plan would not succeed? On the contrary, consequently the plan is the very one which strengthens the child's weakest point. It is just this power that must be cultivated, the power of foreseeing perfected and detailed result and the doing of one thing for another thing so as to achieve it. As the standard of laughter and of inability to read is gradually raised, so gradually rises also the standard of handwriting and of spelling.

The Motives of Writing. The motives in writing are two. First, the "*Kakoothes scribendi*," or desire to express. Second, the desire of appreciation. It is the second which leads to improvement. So long as we write merely for ourselves there is little likelihood of improvement: the writing tends to become ill-expressed subjectivism. An external standard forces us to be lucid, forces us to excel ourselves.

On the other hand, it leads to journalism. If we desire appreciation, we must write what the public wants. There is the real basis of the trouble not in literature only but all through education and perhaps through life also. Our instincts, our fullest knowledge impel us to say one thing. Society gives the praise, and society praises not what is good for it to hear, but what it wants to hear. Above all it loves to be told what it knows already. This is the problem which early faces the boy. Is he to write what he wants to

write? He wants praise: is he to write what the teacher and his fellows want to read? That is the little moral problem of the boy's essay. It is the problem of the schoolmaster also: is he to please the parents or do what is best for the boys, carry out the whims of the Inspector and the Council, or live up to what he considers higher ideals? So also in the Educational Text-book—praise manual work, praise model drawing, be gentle with Latin and not unkind to Greek, give a word of commendation to the Direct Method, and put in a footnote of appreciation for English Grammar, say what every one else wants to hear, and honour is assured. Or say what one thinks. Without contrariance or eccentricity criticise freely in the certainty that such criticisms, even if they were every one of them true, every one of them epoch-making discoveries, will not be appreciated half as much as a tactful sop to everyone's pet theory? It applies all round. The boys in my class are giving sops to my theories or getting undermarked, and I am giving sops to other people's theories or going without appreciation or promotion. It is no injustice, it is a natural social law.

On the other hand, the man who does not write what others want to hear, nor so that they may understand, but for his own pleasure, is an egoist. He deserves his neglect.

There is no rough and ready answer to the problem: it is a question which the boy must solve on each particular occasion.

This, however, the school can do. It can make certain that the boy does not find too appreciative an audience. Not merely must the composition please the teacher; he is too sympathetic a judge, it must please the class as well. Let the boy gradually find the compromise between journalism and art. We have no sympathy for the unappreciated poet: it is his business to be appreciated. If he wants to teach he must make his sermons interesting.

The Subjects of Composition. It is hardly necessary to point out that fixed subjects for essays are an assurance of failure to any endeavour to cultivate spontaneous literary production leading to the subsequent use of literature as an employment for leisure time and surplus energy. Even if the subject be well chosen the mere existence of an imposed theme removes every atom of spontaneity, and reduces the whole matter to an examination level. A fixed subject cannot suit all. The fixing of the subject removes the moral choice between egoism and journalism.

Moreover, it shows in most cases that the teacher has already decided in his mind how the subject ought to be treated; the boys who best approach that treatment will be marked high and originality will be at a discount.

The Methodology of Literature. All the above remarks are, no doubt, admirable as ideals, but how do they become practice? They postulate a very different kind of class. In the first place, the lesson comes towards the end of the day. In the second place, it is not run on class-room lines. We wish to dissociate art as much as possible from the technical subjects. The atmosphere of work must be utterly done away with. We wish to suggest a leisure subject, an occupation for the leisure of after-life. If possible do not let the Literature class take place in the ordinary class-room. Let it be in the Library or in the central hall, ideally in a reading room. Do not let there be desks, but comfortable chairs and a table. Utterly expel the blackboard.

We need a model for such a class. Let the model be that of the Literary Society. The best model of all is the small College Club in the University. Every leisure subject is essentially social. Literature should be a club which any one with aptitude in that direction may join. The meetings are Social as well as literary. There is the reading of compositions, and the production of compositions for the club. There is that most

ingenious idea, the Magazine hour to which each member contributes. In fact, the club supplies the motive for individual composition. It is a social institution. It is a "subject-group," i.e. a selection of persons able and willing to take a part in the study of a subject. It postulates one thing—that the Literature teacher is a man of ability, a man who writes himself, not a mere grammarian, not a mere reader.

The Receptive Aspect of Literature. The main purpose of reading is as an aid to creation. Mere absorption is of no value. It is living and thinking by proxy. The attitude should rather be that we read Shakespeare so as to get his advice in forming our own attitude to life. In other words, reading serves as a model of how to think for ourselves. It acts also as a stimulus to thought and expression. And it supplies materials.

How should reading be studied? Let the teacher put himself in the place of the child :

1. Would you look up a note on the historical origin of the hero in a book you are reading? Have you any interest in the problem how much Conan Doyle owes to Gaboriau?
2. Would you halt in the midst of reading a sonnet of Milton in order to look up the origin of a word? Would you like some one else to do that in reading a piece of poetry written by yourself?
3. Would you like to study a novel, or would you like a novel written by you studied by being read out one by one, a paragraph at a time, by a class of twenty men?—pauses between the paragraphs for explanations by a talkative chairman.
4. Do you do all your literary study by reading aloud?

Surely our aim is that the child should read to himself, that he should read a book of literature sufficiently rapidly to enjoy it as a whole, that he should

extract the substance from a technical work at the highest speed possible. Moreover, the chiefest aim of all is that the child should acquire the habit of reading to himself in his spare time.

Reading aloud produces unconscious vocalisation or muttering during reading. Such muttering prevents understanding of the passage, for a connection is formed between sight of the words and movement of the lips instead of between sight of the words and the arousal of ideas. The muttering of the words further causes the reader to go extremely slowly, since he has to pay attention to every syllable. An ordinary rapid reader reads three or four words at a time, and omits large sections altogether. The reading of a vocaliser is so slow that pleasure cannot be derived from it, and for the reason explained above it is highly unintelligent. All reading should be silent.

It is well to introduce a book by the teacher reading a part of it aloud. Reading is difficult to children: they are deterred largely by the initial trouble of plodding laboriously through many pages before they reach the interest of the book. Having introduced the book let there be if possible several copies, but do not attempt to get all the class reading the same thing at the same time. Let boys give account of books (at "Club meetings"), so that when each child comes to choosing a new book he will have plenty of scope for selection. Let there be hours for silent reading in school time, but much provision need not be made, for we are not forcing every one to spend leisure time in reading. Those who are in the Literature group are selected children who naturally do read. All they need is reasonably scattered opportunity and encouragement.

The best check on the reading of a child is a little log book giving a brief account of each book read. There is no need to compel a child to finish a book which does not appeal to him. Should we do it ourselves? It is only to sicken him of that book for ever.

But method directions are of little value. The great

thing is to bear in mind the aim, and shrink from no device which conduces to it. The aim is that the child should use his leisure time in self-expression by means of Literature.

Drawing as a Means of Expression. We must remember in considering the subject of drawing that there is no particular virtue in drawing itself. It does not help one to perceive: it is not a "training for the eye"; it is not a general training for the hand. In every one of these phrases which proceed out of the mouth of ninety per cent. of drawing masters, the Faculty error lurks. Each of these phrases would justify the copying of meaningless spirals from a board. Learning to draw produces one result—the power to draw. Learning to draw one class of object does not help one much to draw another class. We can learn to draw only by drawing, and by learning to draw we do not learn anything else. Hence if a child wishes to learn to draw, if he finds value in drawing, let him draw. But do not make him do it for some ulterior reason, as we take ipecacuanha to cure dysentery. Let him take drawing for itself.

Language is an instrument of thought. It expresses a succession of thoughts. So a literary description expresses a succession of mental statues resultant from the perception of the object described. It does not describe an object.

The description of an object in words is almost an impossibility. Take the following:

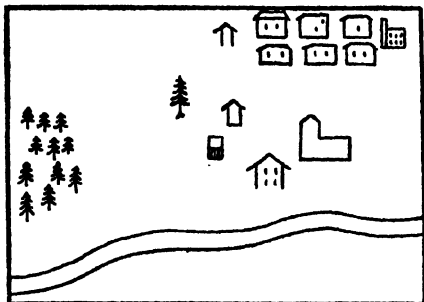
"On the right is a church, on the left is a wood. In the background is a town. In the foreground is a stream. Between the church and the stream is a house. To the left of the house is a well. Behind the well is a shed. To the left of the shed is a tree."

Now, where is the tree in regard to the church and to the town?

Analyse your feelings as you read the description. There is a feeling of impatience and muddle. It is

the same feeling that one has in trying to knock in a small nail with a brick, in trying to open a sardine tin with a pocket knife, in trying to mend a tyre with a postage stamp, in fact, in using anything for purposes for which it is not intended.

How very much simpler the thing is in drawing



The reason of the failure of literature here is this, that in using literature for a description we have been endeavouring to express an existence in simultaneity in terms of successive mental states. Drawing is the language of spatial ideas. All men should be able to draw after a fashion, just as all should be able to speak, because there are some things which can be expressed only by drawing. But drawing as a Liberal leisure subject is reserved for those who excel in expressing such spatial ideas.

The Development of Art in the Child. It is a fair criticism to say that both the South Kensington and the Ablett systems of teaching drawing are analytic rather than genetic. Both start with the simple and proceed to the complex. Drawing does not develop in the child in this way. A child does not draw diagrammatic ostrich feathers or boxes at first start: he draws something probably far more complicated than he does later on.

The Synthetic Stage. We may divide this develop-

ment into stages. The first we may call *The Synthetic Stage*. In the early stages of literature the child merely puts together many elements into a story. The story is pure plot and incident. Its virtue consists in number and variety. Detail is conspicuously absent. The hero is "a man." The scene is "a house," or "a wood"; and "he killed him." It is a collection of vaguely imagined elements.

The same is true of the child's art. It is purely synthetic, aiming at a collection of objects rather than detail or analysis. The presentation is symbolical. The art is dynamic. It aims not at giving reality to one scene, but at presenting a succession of scenes. It is a method of telling a story. Compare the method of the comic paper: this is the art of a child.

As drawing is to be a means of recreation in leisure time, it is of the highest importance that the child should follow closely along his natural stages. Where a certain definite accomplishment is demanded by Life these stages may be disturbed or neglected for the sake of a useful aim. But where pleasure and self-expression constitute the aim rather than any particular task done, clearly the impulse must come from the pupil. And the more closely the lines of his natural development are followed, the greater will be the impulse—and the pleasure.

A point is worthy of notice on the Receptive side. Much has been said of the low quality of the pictures in reading books: a movement has arisen of late years to improve the quality of these pictures. Many school-books now produced show a very high standard of art. Are these modern productions anywhere nearer the truth than the badly illustrated school-books of yesterday? Improvement of the art is not improvement of the school-book. In many cases the better the art the more unintelligible to the child, because it represents a stage further from his own grade. Much as we ourselves may appreciate the beautiful three-colour plates of the modern publisher, there is little doubt that the child would prefer the front page of a

coloured comic paper. It is not that the child appreciates bad art : it is that he appreciates a certain kind of art, a symbolical and synthetic art, a particular style—rather of the Heath Robinson genre. Briefly, instead of developing each stage of the child's appreciation into a style in itself perfect, we are tending to raise the standard of art in the school books by inserting the "higher styles," viz. the furthest removed from the child.

The Stage of Correction. As the child's imagery becomes fainter he feels more and more need of objective support. A hypnotised subject can evolve a complete image with the aid of only a few meaningless dots. A young child who is scarcely less subjective needs only a symbol. But with age he becomes less self-contained ; his images lose substance and reality : a more real presentation must be on the paper, because reality is fading from his mental images.

Hence as the child grows older there is a feeling that the symbols are not like reality. Art is still dynamic, the presentation of successive events, but the absurdity is

seen in the presentation of a man by " . " The



child observes that other pictures are more like reality. Hence there comes a period of tracing, and then the symbols drawn by the child himself become more complex.

There is also a demand for colour. It is noticeable that children do not, as a rule, begin their drawing in colour. The earliest drawings are usually in pencil ; sometimes in chalks with a strange indifference as to colour ; a child will draw his whole picture in green ; he may even begin a picture in green and finish it in another colour.

The distinguishing feature of these two early periods is that nowhere is any use made of a model. The child draws from his own mental images. Only in

the second period there is a feeling of dissatisfaction with the drawing as a representation of the images due to an endeavour to give fading images a reality by setting them down upon paper.

It is interesting to consider the two main schools of art teaching in view of this analysis of the two early stages of the child's art. We have on the one side the South Kensington method ; on the other the Ablett, or more extreme the Visualist methods of certain French teachers. The first method we may call the Objective method, the second the Visualist or Subjective method. The Objective method lays stress on copying and model drawing : the Subjective method emphasises drawing from Memory and "Snapshots." The difference between the two methods is really one of age. In the early stage of art the Subjective element is large : the aim is rather the rapid presentation of ideas than accuracy in delineation or (still less) interpretation of perceptions. Hence Memory drawing. The effect of Memory drawing is to make the hand portray the subjective visual images accurately. In a later stage visual images are few and faint. To draw from the subjective images is impossible. Hence the artist puts together his theme by a copying of parts of various models. Instead of making up his picture out of memories, he makes it up out of bits of reality, here a hand and there a face. The loss of the visual images is counterbalanced by the gain in sentiment. A child portrays an object as part of an action. He portrays it in the light of the action. Only so much is portrayed as the action affects. An adult artist sees the object rather from the aspect of an emotion (the subjective counterpart of action) and portrays the object from that aspect. Hence the impressionist. He does not paint from a visual image. He paints from the actual external object tinged by an emotion within himself.

We would say, therefore, that for the production of an adult artist undoubtedly the Objective method is right. This, too, is the method apt to be used by the

teacher because he (or she) is an adult. The method to which she is trying to make the children conform is an adult ideal. But inasmuch as the child is not an adult, inasmuch as the difference of method is based upon a profound difference of mind and of mental development, the visualist method is far more suited for the early stages of art teaching so long as it is used synthetically. There is no pleasure in drawing from the Memory of a flower-pot when a flower-pot is at hand. The advantage of drawing from an image is that one is not confined to actually present reality. All the fancies of the mind can be made real, or rather projected outwards into a vague scaffolding of art. This method should be used for the cultivation of profusion of artistic imagination. It is not intended for accuracy nor yet for interpretation. Its product is the youthful Doré.

The Stage of Analysis. Four discoveries produce the change from Synthetic Subjective to Analytic Objective art.

1. The child's imagery grows faint, so that he discovers the bareness of the symbol. It is as if the inner scenery faded and left only the external wooden skeleton.
2. Social tendencies develop : the child draws for other people : he finds that to them the symbol is bare : it is nothing more than they see.
3. He observes, owing to the fading of the imagery and a resultant clearer study of the outside world, that these mental images themselves differ from reality.
4. (a) Later, after turning from images to reality, he discovers that reality differs from itself, suffers changes, some of which give him pleasure : he wishes to preserve these moods of nature. Hence naturalism.
(b) Again, he notices that his attitude to nature changes. In some moods he seems to find nature more beautiful : he wishes to express

these moods because they are emotional moods and emotion demands expression. He wishes also to preserve these moods by making a record of nature as it appeared in these moods, so that subsequently he may reawaken the feelings. Hence impressionism when the desire to express the subjective mood overpowers the desire to express the objective basis. It is a return to subjectivism, but a subjectivism not as before of images, but of emotions. This tends to be overthrown, like the previous subjectivism by the social motive. The representation of the subjective mood is unintelligible to others: it seems bare because others do not possess its supplementation. We have here the old conflict between Self-expression and "Journalism." Perhaps truth lies in the mean, the mean here, between Subjectivism (Self-expression) and Objectivism ("Journalism").

The Teaching of Drawing. The above principles might be summarised in a few practical maxims.

1. Let the child in the first stage make up pictorial stories. Teaching will find a place when
 - (a) The child finds himself unable to express a certain object, such, for example, as a piece of perspective. Do not instruct here. Merely show how to master the particular difficulty.
 - (b) The child is dissatisfied with a particular symbol. A rare case in the early period.Otherwise little or no teaching should be given. The aim should be profusion of Imagination.
2. The child will become dissatisfied with his symbolism, not as unreal, but as not corresponding with his imagery. Here by means of very simple outline pictures let the child learn how to represent ideas more faithfully. The weakness is here one of execution, not

of observation (which indeed does not exist), hence the recommendation of the use of pictures rather than objects. The child's question is, "How can I draw a man on a horse jumping?" not "What does the real thing look like?"

3. The child becomes dissatisfied with his imagery as not representing nature. Let the child observe nature: then draw from memory, then observe nature again. Then let him see how someone else has represented the scene, draw it again and compare with nature again.
4. The child wishes to record his mood in the picture. The best instruction here is perhaps the works of famous artists. The faded glory of the Temeraire shows how to deal with the representation of a mood from the technical side.

Note that nearly all the teaching is done by pictures. Verbal instructions are useless: and corrections of the boy's picture correct only the symptom, not the disease. The teacher's main duty is the production of the model pictures in the first three stages, and the selection of them is the fourth. Above all his duty is the example of real artistic ability and enthusiasm. The same rule holds in every liberal subject: no one but a child of real ability in that art should learn: no one but a master of real ability in that art can teach. There are many different arts equally noble; there are many different and equally valuable men: the aim of the school is variety: let the boys be themselves.

Music. The writer trusts he is not incurring the charge of irrelevancy or of unpracticalness if he has indulged anywhere in more abstract theories of art and indeed of the teaching-subjects in general. As one compelled professionally to read a fairly large number of books on method and on educational psychology he cannot help feeling that it is just that particular

petty advice of the "practical teacher" which not only the writer on education but the training college itself most needs to avoid. The teacher must realise what his true aim is. If he says, "My aim is to teach literature," he says nothing. Literature is a section of life. He must go to the basis of the matter; in what way does literature bear on his one basal aim, viz. to make the child a fruitful factor in human progress? Knowing the aims, the teacher proceeds to learn the technique of his profession not by books but by observation of experienced and competent teachers, and thereby may evolve an individual technique for himself. Technique of teaching, as of games, cannot be learned from books. It comes from personal influence.

Let us contrast music and art. Art in its final stage expresses a mood embodied in a representation of the spatial object which awoke it. The sensory element is large: the emotional element is elusive: the picture is rather a representation of the cause than of the emotion itself.

Music contains similarly a sensory element expressing an emotional state, but the sensation is dynamic; it changes from moment to moment, and each moment bears a relation to its predecessors and to its successor. There is thus not merely succession but continuity of change. By reason of this quality, and by reason also of the vaguer appeal, music suggests emotional states far more directly than art with its static visual influence. No emotion is static: it is a continuity of change, like music.

Literature as contrasted with music expresses a far more complex mental state. Words may be symbols of sensory imagery, perception, thought, or emotion. Music, depending upon successive stimuli, cannot express imagery or perception at all, for they are spatial simultaneity. Literature, partaking in a less degree of this quality of succession, is an incomplete expression of spatial simultaneity; it represents it rather as a succession of stimuli. Literature is analytic. In

expressing an emotional state, "I am afraid to love," it analyses a continuous mental state into

1. Fear.
2. Love.

Music as depending on a wordless non-analytic continuity can express this state more vaguely, as a continuous unity.

The sphere of the arts is thus clearly differentiated. But it would not be true to say that each expresses a different thing. Different arts express the same thing from different aspects because men, the expressors, have different natures. They express a vital impulse, a general conative tendency: music expresses it vaguely but almost directly; literature expresses it analytically; art expresses it in terms of its material sphere of action—one might say *Causally*.

It is manifestly absurd to demand all these expressions from the same individual. Individuality consists largely in the choice of art.

The Genetic Psychology of Music. So far as the writer is aware a genetic psychology of music has yet to be written. Clearly there is a very early stage in which the child sings in quarter tones or semitones. These childish songs seem to exhibit different "modes" very similar to Eastern music (and to the ancient Greek music), these modes expressing different kinds of emotion. For some time the child's music is mainly vocal, and a good deal of it is recitative. In this again it resembles primitive music. We would be disposed to doubt if modern rhythms are appreciated until the beginning of adolescence, and if anything of a classical nature is appreciated until middle or even late adolescence. But no power shows greater irregularity in its development.

The subject remains yet to be studied. It is one to which experimental methods are extremely well adapted. A child's account of his aesthetic preferences is extremely unreliable. The retrospection of an adult is here also untrustworthy. Actual measurements of

the physical symptoms of the emotional effects of various kinds of music in children of various ages made by means of the Sphygmograph and Plethysmograph might be extremely interesting. This in combination with the opinion of experienced schoolmasters would add much to our knowledge of the subject.

The Teaching of Music. Although a child does not attain proper appreciation of music before adolescence he finds interest at quite an early age in acquiring the mere accomplishment of playing a musical instrument, especially if that accomplishment is likely to bring him into social prominence. It is highly desirable that the child should learn the technique of his instrument in childhood, so that when the real desire for musical self-expression comes he may not be hampered by a long period of learning. Added to this is the fact that a young boy has probably greater aptitude for acquiring such acts of mere skill.

On the other hand, nothing can be more discouraging to a child whose power of forethought is small than an endless series of scales and exercises. This is sometimes mitigated by little pieces of harmony, but they, too, have usually an obvious instructive purpose to which pleasure is subordinated. The writer cannot claim to be an expert in the subject of musical teaching, yet one cannot help thinking that the teaching of music is made unnecessarily dull largely because it is in the hands of untrained external teachers who have little appreciation of boy-nature. In the early stages of music a musician is not required. In this way the teaching differs from that of the other arts, because the development of the musical sense is usually much later. A teacher is required who has the ingenuity to give apparent results in the early stages. The boy needs—very naturally—something that he can play to people; it may be simple, but it is a result; it gives him the encouragement of having obviously achieved something. Surely—even if the process is slower—the teaching of music might proceed by the

acquisition of successive simple tunes. Is there any virtue in many or any scales ? Or are they not surely a relic in the teaching of music corresponding to those soulless diagrams which originally constituted the first steps in drawing, which like scales served mainly to sicken the child of the whole subject at the very outset.

We would emphasise again the need of remembering that the arts are Pleasure subjects.

What Boys should be taught Music? The question arises, "What boys should be taught music ?" We must bear in mind two things : first, that, leaving prodigies out of account, musical interests do not usually appear until late ; it is then usually too late to begin learning the technique ; second, that music is perhaps the main Social art of the present. In the eighteenth century a gentleman wrote poetry. A man who could write verses had a passport to the society of his fellow-men and women. The man now who can play the piano or who can sing is in a similar position. For these two reasons we would urge that so far as possible all boys should learn some musical accomplishment. A very simple psychological test, or even a mere test with the piano, will show those who are really tone-blind. Otherwise let all learn. In an age of music every man should be able to play something, if it is only a penny whistle. It is not for the musical value that we recommend this, but because nothing is more important to a boy than that which brings him into society with his fellow beings.

The Dormitory Concert often attempts this. It is a pity that the schoolmaster makes boys break the rules in order to carry out something which should be organised in the school curriculum.

We would add one word as to what should be taught. The easiest form of music to teach in the school is glee, chorus, and choir singing. It is also, perhaps, the least useful. The great social need of the ordinary boy in after-life is something which he can stand up

and do for the entertainment of the company. It may be a song, it may be a piano piece, it may be instrumental. The mere power of chorus singing is of little use for this unless it is accompanied by a course in individual singing. Anyone can growl in a chorus.

The cause of the mistake is again a class system. The boys themselves have discovered the right method—namely, the Dormitory Concert, where there is a round of compulsory individual singing (or instrumental playing), and a severe censorship that the tunes be social and popular. The story of Caedmon is an admirable instance of the Pedagogy of music.

Dancing. The teaching of dancing has the same argument in its behalf as Music. Dancing in the west is a social passport. It admits a boy to the society of his fellow beings. It is of especial importance as admitting him to the society of women. The significance of this in the boy's individual life is obvious: it is no less significant to him as a member of society, for inability to dance limits the field of sex-selection very considerably. It means that instead of meeting many hundred different members of the other sex every year, the man will meet not as many dozens. Out of what may be a trivial accomplishment arise consequences of the profoundest effect in the man's own character, and in his self-perpetuation.

At the same time it is very clear that the teaching of dancing in the schools is not in a satisfactory state. In most of the middle- and lower-class schools it is not taught. The social consequences of this reach very far. Dancing among the poorer classes has in many cases an odour of disreputability as of something unsanctioned. Yet the need of it is felt. In every social grade there must be some meeting-place for the sexes. In the richer classes this meeting-place is pre-eminently the ballroom. In the lower grades, in the absence of the ballroom, it is the park or the music hall. The ballroom is perhaps the more primitive and the more

natural, certainly more effective, because it gives a wider introduction in circumstances less likely to lead to a morbid mental condition.

Let us dissociate ourselves from any eccentric attempts to introduce obsolete dances. The dances of the poorer classes will always be a lagging imitation of those of the rich. It is a sure social law. This, however, we would urge—that the schoolmaster may do much to give dancing a sanction which is at present its chief need. The greatest present requirement of the poorer classes is a social organisation where the sexes may meet freely, instead of the unhealthy atmosphere of solitude and a twilight park seat. Philanthropic persons with sensitive consciences found young men's clubs and young women's clubs—separated. These only aggravate the evil. The foundation of a reputable Dancing Hall would be a eugenic factor of the highest national importance.

Dancing is the most direct and the most primitive form of emotional self-expression. Emotion bears a close relation to bodily movement. Emotion is, according to the James-Lange theory, a suppressed tendency to do. If over-suppressed it finds relief in an explosion of action, in hysteria or mania. It is relieved by action. A stiff walk will dispel a fit of ill-temper; clenched fists, striding up and down the room have the same effect. This active emotional relief often tends to be rhythmic. For some reason rhythm seems to have a soothing effect on the emotions. This fact is most clearly exemplified in the child. An excessively angry or a happy child does not rush about; he moves rhythmically: he dances. Moreover, this dancing, like the most primitive dances of backward tribes, tends to be associated with a rhythmic form of words. One of the instances which I have collected is that of a boy angry with his sister:

“I—wish you were déad | —I—wish you were dead
—I—etc.”

This was accompanied by a dancing up and down in

the same place. Another child, after a series of conflicts with the Olympians :

“ Oh—whăt ăn ùn | háppỷ dăy | thís hăś bĕen |
—Oh— — — — —”

This was done marching round and round with a stamp at each “ Oh.” These may be compared with instances of primitive dances and their verbal accompaniments given in A. S. Mackenzie’s *Evolution of Literature*, e.g.

“ The white man is coming home—oh !
The white man is coming home.”

or

“ Hunting, it is good ;
Hunting, it is good.”

Dancing is born in the child : in what way can this embryonic force best be developed ?

The Genetic Psychology of Dancing.

1. The earliest dancing in the child’s life is individual : it is the expression of the child’s emotions for himself and by himself.
2. In a later stage the discovery is made that more emotional and expressive value is obtained from dancing if it is done in the company of others. The rhythmic effect is increased when instead of one, many do the same thing at the same time. In order that all may do the same thing at the same time the previously formless dance must be formalised and made definite, just as the wordless huzzaing of the individual is formalised in the “ HIP, HIP HOORAY ! ” of a crowd.
3. An obvious further development of rhythm is the introduction of response, a Cantoris and Decani. This brings in an element of co-operation and greater definition. The co-operation may not necessarily be of men and women. This is a later stage. In the more primitive dances we find groups usually of the same sex dancing in response to each

other, for example, "Hunters" and "Watchers"; moreover, the introduction of co-operation introduces also a social element. A crowd is not a society: it is a composite individual. Two co-operative groups are a society: they contain that element of opposition yet combination which constitutes the essence of social feeling.

4. The introduction of the sexual element causes a profound change. The dancing itself changes its character. From the quick-time dances expressive of little but animal spirits, and the square military dances, there is a transition to the Waltz and Boston (of modern dances), the minuet and pavane (of the past). The change is significant. Group dancing disappears. The sexual feelings are in a sense anti-social. Dancing with a partner appears. The social element consists in the co-operation of many couples so as not to clash.

The Teaching of Dancing. Dancing, of all arts, most needs to be free of restraint of the teacher in the earlier stages. It is the child's most natural form of expression. If a piano is played in the kindergarten and the children are told to dance, they will dance: they need no instruction. Only as the social element enters in and the dance becomes more formalised is the teacher's power of organisation demanded. Even here we would emphasise that it is not for the teacher to take the initiative. *What* the children dance does not matter, for dancing is a liberal subject. Only a few dances are of inherent value, the ballroom dances which with their sexual element ("sexual" is no accusation) are clearly unsuitable for the pre-adolescent. The teacher's place here, *and always*, is to help the child to do more effectively what he wants to do: he is the organiser of games, the arranger of dances, general business manager, but never director. He organises the child's ambitions into reality. Hence let him

merely carry out the child's ideas. The group of children attempt something difficult. Chaos results : the teacher observes that chaos until he is quite certain as to what are its aims : he organises the chaos into what it is meant to be. He steps in when he is asked and when he knows he is needed, not before.

At the age of adolescence the teaching of the formal dances takes place. Early adolescence is too clumsy and too shy to learn anything of grace or skill. At about the age of sixteen a boy first feels the need of the social accomplishment which will qualify him for female society.

In the case of music we urged that the rudiments of the skill should be acquired beforehand. This is not recommended here for three reasons ;

(1) The elements of music are intelligible to a child before he is properly able to appreciate the emotional essentials. But the ballroom dances are utterly meaningless until those emotional needs occur.

(2) Earlier dances suited to earlier periods of the child's life lay a basis of skill which makes the acquisition of these later dances a simple matter. The child has *the idea of dancing* from his kindergarten experience.

(3) The difficulty of the acquisition of the modern ballroom dances has been greatly exaggerated, largely owing to bad teaching (again by external and inexperienced masters). Moreover, one lesson per week for the acquirement of motor habit is a psychological absurdity. Everything is forgotten in the intervening days. Naturally at this rate a boy takes years to learn even the simple Two Step, whereas he learns the far more complicated act of riding a bicycle in a week or two—because, possessing a new bicycle, he practises daily in a rush of enthusiasm, thus unconsciously following the psychological law of habit, "Frequent practise for a short period and no time for forgetting." Once a boy desires to dance he should have daily lessons for a fortnight.

He should receive lessons not from the typical dancing

master or dancing mistress, but from or under the auspices of a schoolmaster who is respected for other accomplishments also, and who realises the immense value of this power.

A note might be added here on the subject of the schoolmaster's deliberateness. There is a prevalent idea that youthful fickle enthusiasm is wrong. A boy's tendency is to take up a new thing, run it to death and then drop it. The schoolmaster intervenes: he says, "If you wish to do this thing you must not do it in a hurry. Weekly lessons." The boy's fickleness is profoundly right. He has many things to learn. Learning is process of *steeping* oneself in a thing until it is absorbed. A boy naturally tends to learn in the right way, to steep himself in it and then drop it. The schoolmaster with a pedantic "cussedness" checks this tendency. The result is Dilettantism and an overcrowded, finicking curriculum, a bit of this and a bit of that, perpetual change and nothing absorbed. The boy is taught to be a butterfly in knowledge—10.30 to 11.30 French, 11.30 to 12.30 Arithmetic, and so on. This is not the way in which we ourselves study: even we, blasé and old in comparison, soak and then cast away.

In an ideal school there would be far more subjects; each would be enthusiastically intensively studied, and then dropped, to make place for something new.

Drama. Drama and dancing are very closely related. Early dancing is often merely rhythmic acting. Only in time do the two become differentiated. Even in the later stages Drama, music, and dancing tend to be closely associated. For this reason Drama is of very high value for the school, because it embodies in itself so many other subjects. The production of a drama is not merely the work of a few specialists. If the organisation is properly managed, a place can be found for every boy of any kind of ability in the school.

Certain boys have dramatic talents: they act.

Others have musical talents : every well-produced play involves music. Others have artistic abilities : scene painting is an art in itself, and a most valuable one : nothing teaches so well the suggestive quality of art—that art consists not in representing an object photographically but in intimating it, not in giving ideas but in calling them up. Nothing teaches so well the values of colours. Nothing again is more valuable in giving breadth and courage of style. There is a tendency to fear the cost. This is not justified. The initial cost of canvas is not large, and the reader is probably aware that, once the canvases are bought, they can be used over and over again, new scenes are painted on the top of the old ones. The cost of paint is very small.

Some boys, again, are of a purely mechanical turn of mind. Few subjects give them such opportunity of turning their gifts to account. The scenery frames can be made by those who have only a very rudimentary knowledge of carpentry. The hanging of the scenery needs more skill. The lighting is a task for the senior scientific pupils.

A good deal of secretarial work is involved in the production of a play, and a good deal of minor organisation : these again give opportunities.

We would urge that this department of the Liberal studies of the school has been very gravely neglected. A play is looked upon as Play, whereas it is real work. Its value lies in this, that it is work for everyone. It is the largest and most complicated piece of co-operation and organisation which the boy is likely to see in his school life.

If a play is to be of value it must be done well. A cautious amateurish piece of work is mere waste of time. A play without technical perfection of acting, without scenery, without lighting, is very truly mere idle recreation. If the play is to be of value it must be perfect in every detail. It should be at least a month's hard work in spare time—usually more. It

should come at the finish of the boy's school career. The effort will not be wasted.

If time is valuable let time be saved by making the play short, but whatever is done, let it be complete on every side.

One danger is to be avoided—that of the interfering schoolmaster. There are many ways of producing a play: the schoolmaster thinks his to be the only way. This is most harmful. The schoolmaster's duty is of organisation with the aid of the most senior boys. He supplies technical advice only when asked or when a suggestion will add greatly to the work and the perfection of the result. In that case the suggestion is carried out by others, by those who asked for it.

The Genetic Psychology of Drama. (1) In the earliest stages we have mere mimicking, at first the imitation of individual sounds or acts, then caricature of persons.

(2) Later (as in drawing and literature) there is a drama of mere incident with a rich subjective supplementation. The play to an adult seems bare because he cannot perceive how much is in the child's mind of which this visible part is mere scaffolding. There are no written words, no divisions of scenes, no costumes, no scenery. The "staging" is severely Shakespearean. In this period, the "Transition class" or kindergarten grade, the teacher should merely suggest the acting of a story. An audience is not required, and is a disadvantage. The child is acting for himself so as to realise for himself. A play is seldom repeated.

(3) The subjective supplementation becomes weaker. Hence the external presentation is made more perfect. For this purpose the written play is evolved, at first a mere skeleton or plan, later a complete "book." Costumes first, then "Make-up," then Scenery make their appearances. The play is now externally intelligible. At the same time, social interests are developing and the appreciation of an audience is welcomed.

(4) With the birth of emotional life the play becomes more sentimental, acting tends to ranting. This ranting is done largely for the satisfaction of the actor's own need of self-expression. It is a welcomed safety-valve.

(5) With the decrease of egoism in later adolescence and the disappearance of the purely ego-centric view of boyhood, acting becomes more interpretative. The actor does not throw himself into the character. He is an interpretative medium between it and the audience. He thinks of those to whom he is acting.

At the same time, with the disappearance of the ego-centric attitude, the boy begins to observe and form estimates of the characters of other people. Previously he has taken people as he found them, in a negative non-critical way. His character is now becoming more consolidated. He begins now to envy the way in which adults can adopt an external view and appraise, evaluate, and assign motives to other people. They have separated themselves from the mass and can think about others. "So and so is very conceited because he thinks he is well born." "So and so is going to marry a young wife, that is why he is putting on these boyish clothes and airs." A child cannot gossip : gossip and criticism involve a positive attitude of non-suggestibility. In late middle adolescence (sixteen onwards) the boy begins to cultivate the critical attitude towards others. He begins to be crudely critical of his schoolmasters. In the early undergraduate stage this is very marked. The criticism is excessive because the boy feels a lack of the non-suggestible critical attitude and is trying to cultivate it.

At this stage interpretative drama is appreciated, and at a still later stage acting becomes a study of character.

Treatment. In the early stages (1 and 2) the teacher should do nothing but encourage and supply materials. In the "ranting" stage great discretion is needed. Here the child throws himself into the character very

completely : he lives it. This serves a valuable purpose in the evolution of the boy's own personality : some relics of the traits of fictitious being remain. In the same way he lives the characters of the books he reads. This, carried to excess, may result in a pathological disturbance of personality. It does so only if it goes no further than subjectivism, if the boy does not carry the new characteristic into life, but lets his thoughts prey upon himself, "I am Napoleonic," and a long string of imaginary adventures. The teacher's guidance is needed in leading the boy from this stage (both in literature and drama, and in general character-formation) to the interpretative and the critical attitude of the consolidated personality.

In the critical stage the teacher may do much. We are too discreet. The boy longs to hear criticisms and interpretations of other people. Each such criticism that he hears has a profound effect on his mental attitude. If we abstain he will hear the criticisms of some one less discreet, and probably less kind. Let the teacher discuss with the adolescent. Let him teach him both in literature or in art or in drama at this stage to appraise and appreciate others from the external point of view.

Summary. A great deal of space has been devoted to the Liberal subjects, partly because at all costs we wish to avoid the accusation of Utilitarianism. Utilitarianism is a one-sided view, but no less one-sided than Liberal Culture. It is one-sided to teach a child the practical duties of life with none of the higher arts which give to those duties bearing and value. It is equally one-sided to teach the higher arts without the practical duties in relation to which they can only have meaning. The one is Factory life ; the other Monasticism. We do not know which is worse : at least the factory is useful. The aim should be to set Liberal and Technical in relation to each other, Liberal as something individual which comes after and interprets the social life.

PART IV.

CHAPTER XIII.

FEELING.

Explanation of the Term. Every complete mental unit contains sensation, thought, and action. "FEELING" is a technical term used to denote Pleasure or Pain. It is something added to the sensation. Thus sensation tells us of the vibrations which form a discord, but it reports them as a mere fact. Feeling is something added whereby the discord is distinctly unpleasant.

Every Sensation may be Pleasant or Unpleasant. Cold may be unpleasant, *e.g.* the damp chill of a winter's day. On the contrary, it may be very pleasant, a soothing, cool, summer breeze, a cold bath when one is dusty and sticky. So with the sensation for the nerve ending in the skin which gives us cutaneous pain: this pain may be pleasant or unpleasant. The prick of a pin is unpleasant, on the other hand we deliberately cause ourselves an extremely pleasant cutaneous pain when we "scratch a tickle."

We may note one detail—that Feeling seems to vary with the intensity of the sensation. A very slight cutaneous irritation is unpleasant, more intense is pleasant, until a neutral point is reached where the sensation causes us no particular pleasure or displeasure. After that again it becomes pleasant, but increased still more it is unpleasant.

Feeling according to Context. The pleasantness or unpleasantness of a sensation may vary according to

the surroundings in which it is placed. Thus blood-red on a rose is highly pleasant ; but on a man's face it is highly unpleasant. The green of a leaf of a flower is pleasant ; but the same green on a piece of meat is highly unpleasant.

The Characteristics of Feeling. The most noticeable character of Feeling is its vagueness. It cannot be defined : it cannot be attended to. It cannot be brought into consciousness ; it hovers around us like a shadow : turn the light upon it to examine it more closely and it is gone. So evanescent is it that often it is hard to say whether one's feeling was pleasure or pain.

Note again that Feeling is much affected by habit. The first caning I received was no doubt very gentle, but it caused me agony. Later canings (there were many) were somehow less painful. Habituation may actually make a thing, once unpleasant, pleasant. The first time I tasted Tonic water I found it extremely nasty ; now it is a favourite drink. A young Indian strongly disliked the taste of cocoa : one year after he liked nothing better. So most of all with music : habituation makes English music pleasant to me : whereas Bengali music is unpleasant. On the other side, a Bengali gentleman is excruciated by English music.

The last characteristic is the most interesting. The greatest psychological contrast is that between pleasure and unpleasantness. Blue and green are different : but they may mix. Pleasure and unpleasantness are incompatible. They are the north and south poles of the mind.

Theories of Feeling. What is feeling ? According to some authorities it is an attribute of sensation. Sensations have Duration, Intensity, Quality. They are the ordinary accepted " attributes." These writers add " Feeling tone." But if the accepted attributes be reduced to zero, the sensation ceases to exist. If the sensation has no duration, or else no Intensity,

or no quality, it is nothing. But though it has no feeling, no pleasantness or unpleasantness, it may still exist. Feeling is evidently different from an attribute, for it may exist or not exist independently of the sensation.

Others have held that Feeling is itself a sensation, that unpleasantness is a low degree of cutaneous sensation. Thus an unpleasant sound has linked with it by an associative path a low degree of such pain, and that forms the Feeling tone of unpleasantness. But we have shown that cutaneous sensations themselves have a varying feeling tone. So this theory seems improbable.

Wundt, a great German psychologist, shows that feeling is accompanied by certain bodily changes. The feeling of pleasure is accompanied by quickened breathing, slowed and strengthened pulse; of unpleasantness by slowed and strengthened breathing, quickened and weakened pulse.

This suggests that Feeling has much in common with an emotion. James and Lange formed a theory simultaneously that emotion is felt through bodily adaptations. Fear is accompanied by certain visceral adaptations and muscular changes. These give us the feeling of fear. And these changes are really the beginnings of bodily adaptations for running away. In other words, emotion is the beginning of an action.

The Primitive Instinct. Suppose then one primitive instinct of Appetition (or Seeking) and its contrary, Rejection (or Thrusting away). The simplest form of living thing has no complicated tendencies of fighting or fearing. He has one main tendency, to seek. The opposite of that tendency is Rejection. Life has only one basal tendency, to do, to express itself. That is pleasure. All things are pleasant that conduce to it. Unpleasant is something with which we cannot do anything, or which is likely to harm our powers of doing. On that basis of vague pleasantness (usefulness) and unpleasantness (uselessness and harmful-

ness) the primitive creature selects. He does not select intellectually. He does not think : " This green is a sign of verdigris. Verdigris is bad for me. Therefore I shall not seek this morsel." He acts instinctively or " intuitively," like a dog eating grass or a cat refusing vegetables. This instinct of seeking or rejecting is a tendency to react to a stimulus or to avoid a stimulus.

Man has given up this method of selecting from his environment. He thinks. But the old " general instinct " remains and says that this is pleasant and that is unpleasant, meaning, of course, that this is good for us, and that is not good for us.

Very often pleasantness and unpleasantness do coincide with Good for us and Bad for us. If we acted entirely on that ground of choice, no doubt we should get along pretty well. But because we have arranged our lives differently it does not answer. We find that many unpleasant things may be good after all, simply because Feeling is too cautious : it rejects bad meat, it also rejects quinine, which is good for us in moderation. The fact is that feeling does not take into account the accepting of something unpleasant for the sake of an ultimate pleasantness to ourselves. Still less does it reckon on this—that we are members of a society, and that for the sake of the general good we derive from society we may endure many petty inconveniences or even actual harm.

The instinctive or feeling-selection by pleasure and pain is in the first place *purely for the present*, and in the second place *purely individual or selfish*. Because intellectually we can look beyond the present, we are also able to look beyond the individual.

The Pleasure and Pain of Instinct. The vague pleasure and pain of sensations is only a primitive and general edition of the far more definite and intense pleasure and pain of special instincts.

The pleasure and pain of sensations depend upon the checking of the immediate reaction of a primitive

instinct of Appetition and Rejection. The primitive instinct of Appetition has developed into the complicated instincts of the animal and of man, instincts of feeding, constructing, parenthood, etc. Rejection has become Fear. Pleasure comes to us when we are able to fulfil these positive tendencies ; unpleasantness is the checking of the positive tendency, perhaps the actual substitution of a negative tendency of withdrawal. Those things are pleasant which conduce to the fulfilment of positive tendencies : unpleasant things are checks, things which do not conduce, things on which instinct may not safely be used, reaction to which we must actually avoid.

The Animal's Hedonic Selection. The animal selects on the basis of pleasantness and unpleasantness. This serves him very well. The correlative of instinct on the expressive side is a pre-adapted instrument of action, on the receptive side it is intuition. The animal is fitted to his world both as regards tools for doing, and the resultant intuitive sympathy for knowing. His intuition tells him "that is pleasant" and he seeks it ; "here you may act," and he acts with a pre-adapted limb.

But just as the primitive creature of Appetition and Rejection was narrow and shortsighted in his choice so is the instinctive animal. Intuition and Instinct say only that the present situation is pleasant, that here action will be pleasant. Intellect says that though action here may be unpleasant it will lead to ultimate pleasant results.

On this basis we have built up a society of individual abnegations resulting in a larger total sum of good.

The Theory of Feeling in Education. (1) *Aesthetics*. The theory of feeling has two important bearings on education. One of these has been dealt with already. The other will occupy several succeeding chapters.

The place of the liberal subjects and of art in the child's life is discussed in the chapters on Imagination and the Liberal studies. Perhaps the theory of

feeling will shed a little more light on this important question.

The intuitional way of knowing the world (or rather of sympathising with life) and the intellectual way are alternatives. Intellect has given us much. It has made man the lord of matter, to mould it and shape it to his convenience. We see in the world the foreshadowing of our own constructions. We look upon nature as the plastic and divisible material of workmanship.

Woman, whose duty in life leads her less to the arts of creation, as is suggested elsewhere, does not wholly share this view. Her main work is the bringing of life into the world, caring for it and watching over it. Therefore she has retained somewhat of the power which man has lost, the power of insight into the vital onrush of the world. As a mother she sympathises and instinctively understands her child. By the same power, perhaps, she has an aesthetic endowment which we men, workers in the forge of matter, cannot fully grasp. Nature and life have a feeling and a beauty for her as a sex: only a few exceptions, abnormal geniuses among men fully possess these feelings. They are not man's heritage, or rather they are a heritage which he has lost.

Hence we find that woman as a class is perhaps more aesthetic, more poetical than man. It is not emotionalism. It is that she sometimes knows the world in a different way—an unpractical way, an instinctive, intuitional way, as she knows her children. She is also more religious. She is not philosophical: she does not think; she believes. She believes in a way as if she had seen something we argue about.

We hear practical men despising all these things and saying they have no part in them. They delight to sever themselves from such fancies. They say that the age of poetry has passed, and that science has killed religion. They speak with the air of having gone beyond such things. They do not realise that theirs is not a conquest but a loss.

It is true that business and poetry, science and religion, have nothing in common. It is just because we will mix them up that we fall into difficulties and errors. If we look at the human body from the point of view of a dissector, we cannot expect to find life there : and if we look at the landscape from the point of view of a contractor, we cannot expect to find mutual sympathy and the unpractical vision of the wide river course of nature's life. So, too, the science which gives us such great power over matter was never meant to detect God. We cut Him out of our calculations at the start. Just as we have to forget our religion when we consider the world scientifically ; so, too, we have to forget our science when we consider it religiously. They are two points of view, two psychological poles. When the scientist and the priest or poet begin to argue, it is like a blind and a deaf man arguing : the blind man denies light because he cannot see it, and the deaf man denies sound because he cannot hear it.

Art aims at more than mere recreation : it aims at that *other* view of the world which is absent from work. The mere " practical man " without that other view is just as incomplete as the poet destitute of the practical view. We do not protest against the Liberal in itself, nor yet against the Technical. We protest against a confusion of them, such a confusion as the idea that liberal studies alone are a preparation for life. Or the Technical either. Let us separate them very clearly in our minds, and put each in its place. Let us try to see and teach our children to see both sides of the world, its plasticity as a field for their energy, and its beauty as a part of themselves.

(2) *Morality*. The theory of feeling leads us, secondly, to the very big problem of moral education.

We still hear the doctrines of Rousseau discussed in the Training College—more now than of recent years. A real tendency is making itself felt to let the child develop himself. Rousseau originally protested

against an education which assumed that the child was in the sin of Adam, wholly bad, and that upbringing consisted in checking his every tendency, and substituting the opposite. If children want to talk, it is the devil in them; make them silent; if they are big eaters, it is the devil; make them restrained. Rousseau set out to show that the child's tendencies are naturally good; that it is society which is artificial and wrong.

We have passed the stage of education by suppression; we have a new ideal, modern education is almost a Rousseau education. Unlike Rousseau it does not say, "Leave the child alone and he will grow good." But it does say, "All the good at which we are aiming is *in* the child. Education is only a process of bringing out." It aims at "eliciting."

Is a child born good, or is he born bad? That is the question. Is education a process of encouraging a seed to grow along its natural lines, or is it a process of changing, of clipping, and forcing and training, here a check and here a deliberate over-development.

Clearly the tendency of the modern psychological education is to say, "Let us find out what the child is, how he naturally grows, and lead him along that growth." The only way in which we differ from Rousseau is that we admit that the child needs leading. Otherwise "Education is a process of natural development."

In other words, the child is born with certain instincts: education consists in developing these instincts. The natural life is the life by instinct. The life by instinct is a life of intuitive selection by pleasure. That selection is undoubtedly correct.

For an animal such life is right: it produces the best animal—and the bad animals die off. But a child is a member of society. He has had the life of instinct abnegated for him by his parents, by his ancestors long before he was born. In so far as he chooses by pleasure (which is his natural inborn

tendency) he chooses for the present, and he chooses for himself.

Whereas society has set up a series of choices for the future and for others, namely, morality.

These choices are individually wrong. One might put it that they are individually immoral. As individuals we should eat what we can find, kill those likely to do us damage, reproduce ourselves as often as we can. And the conflict of warring individual self-seekers produces a good race—by natural selection. Whereas society goes on the principle, "Let us give up some of our rights. I give up my chance of killing you, you give up your chance of killing me. Let us endure petty inconveniences, abandon petty pleasures, and instead of living by immediate instinctive selection, we shall have to *think* out another way, a series of rules."

Just because the child is born an instinctive being into a society based on intellect, on "thinking out," he has to be educated. A new mode of dealing with the world, namely, intellect, must be imposed upon him, with its powers and restrictions.

In fine, education is not self-development. It is an artificial development. By education the child is transformed from what man was, an animal, an instinctive creature, into what man is, an intellectual creature, with social morality, a substitute for individual instinctive selection.

The child cannot think out the meaning of society. He is not born an intellectual social unit. He selects by pleasure. Hence the adult educator has to set up an artificial series of pleasures and pains, so as to make an artificial pleasure-pain connection corresponding to the intellectual social idea.

$$\left. \begin{array}{l} \text{Individual good + pleasure} \\ \text{Individual bad + pain} \end{array} \right\} \begin{array}{l} \text{is} \\ \text{changed} \\ \text{into} \end{array} \left\{ \begin{array}{l} \text{Social good + (artificial)} \\ \text{pleasure.} \\ \text{Social bad + (artificial)} \\ \text{pain.} \end{array} \right.$$

This is the first stage when habits are formed before the child can understand.

Later he understands more and more what he gets in return for his abandonment of his nature, and becomes a more willing and thoughtful co-operator.

In short, feeling is the morality of the animal, perfectly good morality for an individual, but expensive, because it involves a lot of "killing off." Man has abandoned it. He is trying to live not by intuition, not as an individual, but intellectually, for the sum total of men. That endeavour is morality. That alteration is Education.

CHAPTER XIV.

INSTINCT.

The Problem. As educationalists we have to consider two questions—one, the sociological question, what must the child become? two, the psychological question, what is the child? We have shown a grave fallacy in taking the latter, the psychological question, for the sociological. The sociological aspect tells the aim; the psychological aspect tells what we have to start with.

Human society was evolved on a “psychological” basis, for it was evolved by man. It is, therefore, not a complete opposition to his instincts, but a development out of his instincts, a modification and rearrangement. The duty of the Psychology of Instincts is to tell us what was rearranged, the starting point of society, and what has to be rearranged, the starting point of the individual candidate. Ethics and Sociology inform us of the finishing point, the rearrangement that was made, and has to be made.

The Evolution of Instincts. An instinct is an adaptation. We saw originally two simple adaptations of Acceptance and Refusal. In this stage there is one organ of sensation—the primitive touch sense. The nervous system is not yet centralised and there is little Choice.

The complication of the sense organs, and of the nervous and muscular system brings about a greater discrimination of stimuli and a greater variety of

response. Thus the stimulus of pleasantness or invitation to receptive action becomes differentiated into many kinds of pleasantness, pleasantness as useful material, pleasantness as food, pleasantness as a companion. Correlatively the receptive action becomes differentiated into many kinds of receptive actions, eat it, use it, join in a mob with it. Thus from Acceptance and Rejection is developed the complex series of human instincts.

The Physiology of Instinct. "Instinct is an innate connection of afferent (in-coming) and efferent (out-going, motor) neurones." It has been also defined as "The faculty of acting in such a way as to produce certain ends without foresight of those ends." In other words, it is such a direct connection of an inevitable response without choice that there is no pause, no presentation of alternative paths, no choice, and hence no consciousness. Foresight consists in remembering what was done on a previous occasion and the results, and thereby selecting. When we act by instinct we do not remember previous acts, nor yet select. We do not, in seeing food when we are hungry, remember that on a previous occasion we ate this sort of thing, and in view of the pleasurable results select this course from other possible courses. There is no range of selection, and hence no pause for thought.

The Classification of Instincts. We must not classify instincts as if they were so many little forces inside us, independent of the environment. They are life's fundamental modes of activity, the chief things which life has to do and *wants* to do in order to exist in matter. From the other aspect they are the great permanent factors of the environment to which we have to react—Food, Danger, etc.

But in society the circumstance is somewhat altered : the great factors of the environment remain, but we cannot always react to them when we want to ; we must defer and go indirectly. Individual life cannot

always do what it wants at its own chosen time : there are other lives of which it is a part.

Instincts are best classified by the needs which they serve. We have needs

- | | |
|-------------------------------------|------------------------|
| (1) for self-preservation ; | Individual Instincts : |
| (2) for learning ; | Adaptive Instincts : |
| (3) for joining in with
others ; | Social Instincts. |

Out of the impulse of these instincts the artificial structure of society has been evolved on a natural basis.

Thus we may arrange the instincts :

- | | |
|-----------------|---------------|
| 1. Individual : | |
| Self-assertion. | Fighting. |
| Acquisition. | Reproduction. |
| Feeding. | |
| 2. Adaptive : | |
| Play. | Imitation. |
| Curiosity. | |
| 3. Social : | |
| Self-abasement. | Constructive. |
| Parental. | Expressive. |
| Gregarious. | Religious. |

There are far more instincts than these. Every unlearned reaction is an instinct ; everything we are born able to do, *e.g.* to wink, to suck. But the above are the great human motives which determine the main course of life and the direction of its activities. They are the wide channels of life.

INDIVIDUAL INSTINCTS.

Self-Assertion. The instinct of self-assertion is seen in a child bragging amongst youngsters. It is the desire to take command, to be heard and seen—and

admired, to impose oneself on other people. As the child grows older this instinct has more and more scope. A child in the nursery has no one to patronise and be assertive to but his younger brother ; at school there are many juniors, an increasing number as he goes up in the classes. As an undergraduate he has his late schoolfellows ; as a graduate undergraduates ; as a professor the graduates. One by one those persons and classes to whom we cannot be self-assertive fade away. But, even were we superior to all individual men, two things yet remain, society and God.

Curiously enough, as these successive restraints are removed the child instead of becoming more "self-assertive" seems to become less so. The boy at school brags less than the child in the nursery ; the undergraduate somewhat less than the boy at school ; the man of position in the world, less than the junior clerk. One of the reasons is this : Self-assertion is an assertion of self ; they have most need to make the assertion who are in the most inferior position. The child and the man who brags, who thrusts himself upon other people's attention is the child or the man who is least certain of his recognition. Let the reader examine himself. Do you, as a man, brag before children ? No. Why ? Because you are confident of the recognition of your superiority : there is no need to brag : it is superfluous. You brag before those most nearly your equals, because there your power to command, your power of self-assertion is most doubtful. Perhaps you will agree with me that the self-assertive man or child is usually the person who is most doubtful of himself.

The chief aim of character-formation is the development of true Self-Assertion. By "true self-assertion" we mean individuality, confidence, power of independent judgment, power to command, power to obey without loss of dignity. All these depend on certainty of oneself. Certainty of oneself means certainty of

one's capability. Capability is power to do. It means confidence in one's power of *doing*.

There are two separate factors here—"power to do" and "confidence."

The scholar's nervousness and lack of disciplinary power is notorious. Both arise from the subjective nature of his life. Self-confidence is closely associated with the tone of the muscles. The big, strong man tends to be respected, and to respect himself. It is a primitive and basal tendency—for the strong man, the man who can run and kill, to be confident and be confided in.

Skill as well as strength may give this feeling. When we are doing some skilled act for another, *e.g.* a simple little bit of home surgery, the tendency is for the patient to be respectful and the operator assertive.

Strangely enough, on the other side, the loquacious man, however much he knows, is always the jest. In an interview it is the applicant who talks, and the employer who is silent. To place one's interviewer in a position of inferiority it is only necessary to adopt a solemn and unresponsive listening attitude. This is a truism.

In fact, body and mind were made for Doing. Character is the outcome of capacity to do. And the doer is the commander. Hence for years past the headmaster has appointed his best class-teachers from the First-Class Finals list, and found his classes disorderly. He has appointed his prefects from the Sixth form and been equally disappointed. In spite of his efforts the tendency has been for the junior master who spent his time at the University on athletics to lord it in the common room, and for the unscholarly Captain of the football team to order about the divinely appointed prefects. It is human nature criticising a scholarly educational system.

Only this is to be regretted, that the strength and the skill which make a man commander should not fit him for life; that the boy best fitted to command

should be the boy who has played, not worked, and has not the practical skill to put his character in a position of use. In the lower social grades the skilled farmer is both the best disciplinarian and the best workman. In the upper classes the man who has the physique and the skill to be of character wastes his powers on an excess of unproductive play because he is of too good stuff to destroy them on an unproductive and inactive philological course. The school presents us with the choice of uneducated character, or educated incapacity.

The true education forms character without any additional course of moral training. The education which teaches to do, teaches the power of command. But if we separate thinking and doing, doing being an athletic antidote to thinking, character becomes an accidental product, and the more incompetent the boy is as a thinker or a worker, the greater his chance of equipment for a post of responsibility. On the contrary, the unequipped thinker is appointed.

There is only one solution : to make education a preparation for life, a preparation for intelligent doing ; to take it out of the hand of the pure Liberalist and teach the child to work as well as to play.

Secondly, with regard to Confidence. We are still obsessed by the idea of restraint in the school. Schools are looked on as places for knocking the edges off, knocking into shape, knocking the nonsense out, knocking the conceit out. On the other side, there is the function of the school of bringing out special powers, of giving an increasing self-confidence by a course of graded difficulty, of increasing self-realisation. Many boys every year come out from the Public schools characterless, "worms" as they are called, because they have been knocked, knocked into shape, nonsense out, conceit out, edges off, etc. They have been told for six years that they are to be humble, not to be "cocky," not to believe in themselves as capable because others are more capable. And they have

become Self-skeptics. The reason of it lies in this, that they cannot do the things which the school thinks of value, and whereas life demands difference they have been unable to become uniform, probably because they had special powers. These powers may blossom out at the University, but their character has been already formed, and they live and die apologetic.

Let us teach to *do*, and teach to *do different* things. This is the secret of the formation of individuality.

Fear. This should more correctly be termed the instinct of Flight. It is an innate tendency to self-preservation from danger. Like all instincts in its early stages it is unspecialised. There is a tendency to avoid by flight and to fear, but not to fear or fly from definite things. Similarly, there is a tendency to love, but not a predisposition to find any particular objects lovable. This will be determined by the influence of the child's environment. The first few occasions of use will largely determine the direction of an instinct.

Hence most of the child's fears are imitated from his parents. It is said that the child has certain fears inherited from remote ancestors—of darkness, of teeth, and of fur. These will be exceptions to the general rule. They do not matter, because they very quickly disappear. Certainly a child has no hereditary fear of insects, of crossing the street, even of fire. The child's, like the animal's, fears are learned from his mother. This is an important part of animal education: by it the mouse learns to run from the cat, and the cat from the dog. The young animal is consequently particularly amenable in the matter of acquiring fears. So also is the child.

"Nervous" children are the product of nervous mothers, not because the children are born nervous, but because they have learned to be so. Indeed, the child's general attitude to the world is largely formed during early years—whether it is an attitude of fear or of self-assertion (fear is the exact opposite of self-

assertion). If it is self-abasement, instead of going forth to meet each new object of whatever kind, the child tends to fly away from each new object. Hence many children come to school timid, miserable, self-concealing little objects, not because it is the way of children to be such, but because they have learned it from their parents.

It is very important that such children should be kept in small classes, that they should be segregated from the little savage and the potty autocrat. Let them get confidence by finding others even more retiring than themselves. To put a boy of this kind with lusty and fearless creatures merely aggravates the evil. He must be put with his kind.

The aim of the teacher must be to give him as far as possible a justified opinion of himself. What knowledge he learns does not matter. The great thing is to get some muscle on to him. Let him learn to do things which will gain him respect, to swim, play cricket, and fight. Only the teaching must be gentle. Many boys are set against athletics by being taught too vigorously. Of course the ideal boy takes to athletics as a duck to water. But not all boys are ideal. Our aim is to make as much as possible out of every boy that comes to us. Nearly all boys are potentially ideal; their chief need is the confidence to be it.

If we analyse fear a little more closely we shall see its extreme importance in life. Fear is always of a new unknown factor in an otherwise familiar environment. Thus a loud noise from no apparent source; a blow of which we cannot see the giver; an animal we have not seen before. Fear is of the unknown. The unknown is what we do not know how to react to. We may either avoid the unknown, in which case we fear, *i.e.* we avoid reacting; or we may investigate it, in which case we seek to react to it. So fear is the exact alternative to learning.

The treatment of fear is, therefore, learning. If a child is afraid, promptly take him and investigate the

thing. In selecting early lessons always teach the terrifying things in preference, a steam-roller rather than a button.

But some things we would not have the child learn. Let him fear these. He will learn to fear them by seeing others fear. Let him fear vice, evil, and excess, above all ill-health and all its causes.

Fear is also a disciplinary factor. It serves two purposes in this connection. It contributes to prestige, and, secondly, to habit-formation. With regard to the first: Tarde and Keatinge have noted that the main factor in the spread of imitation is the "Prestige" of the person imitated. The child always imitates the man with Prestige. Prestige may be analysed into fear and mystery: we do not know what the person is going to do, therefore he is always a doubtful factor in the environment, something to which we cannot react. We have already pointed out that fear is the "beginning of wisdom." Self-assertion is the teaching attitude. Fear is a negative attitude, which may develop into the attitude of the learner. Moreover, the mere fact that So and So is feared by us shows that So and So is stronger than we. The tendency of the child is naturally to imitate and learn from this superior, stronger person the secret of his strength. Consequently it is always the strongest disciplinarian who has the strongest influence, not merely in character, but in tastes, even in the petty peculiarities of dress. The truth of this Law of Imitation will be felt by the reader if he looks back over his memories of school life. Who had the greatest influence on him, the weak master or the strong? The weak master may have been a better scholar and a better man. But was not the brute (even the unjust brute) most imitated?

Ideally, the master should be loved and feared, but especially let him be feared. Practical gifts of making and doing cause more respect in children than scholarship. Athletics, of course, contribute much. But

greatest of all is the quality of silence, the quality of leaving always half unsaid, of asking quiet questions instead of making statements—asking questions and then saying, “Hm, Hm, . . . Yes.” Many people whose minds are stagnant and sluggish have a great reputation for forcefulness of character just because of their Strong Silence. They leave so much to the imagination. It is a great gift to be able not to talk. It impresses people more than all the wisdom of Solomon.

It impresses people largely because silence is an indication of non-suggestibility. The silent ponderousness of the person to whom I am speaking shows that my words have had no influence on him, that he stands as a rock unmoved. If I do not influence him, the probability is that he influences me. To adults this episcopal ponderousness is irritating. But it impresses children. It is one of the chief qualities of the disciplinarian.

We cannot warn the schoolmaster too often against the ideal of being friends with his children, even of being loved by them. The man who wishes to be “liked” is, in most cases, merely despised. Was not that your own attitude to such when you were a boy? Children do not love the people who love them as much as they love those whom they fear and respect.

Secondly, fear has an influence upon habit-formation. Fear is the apprehension of pain or damage. By instinct we reject pain, and we reject things associated with pain. This, as we showed in the previous chapter, is one of the most fundamental acts of the mind. It is possible or probable that the mental impression of fear is stronger than that of hope, for the simple reason that one bad thing may cause total extinction, whereas one good thing cannot cause more than a temporary prolongation of life.

Hence we find that law is more often based on fear than on love, especially among more primitive peoples. Except the sexual desire, there is no feeling more intense than that of self-preservation and avoidance

of pain. The religion of the Jews is largely based upon fear; much of the morality of present-day Europe—if not all of it—depends upon fear, for there is no stronger deterrent from wrong than pain after the event unless it be fear before the event.

Sexual love (not using it in its narrow sense of lust, but in its broad and noble sense of the desire of parenthood) is positive, assertive, and the basis of the altruistic impulses. Fear is negative, and might be called the basis of the egoistic impulses. The morality of love is a desire to expand oneself, to do Good to others for other people's sake. The morality of fear is negative; it is not doing Bad for one's own sake.

There are two great phases in the child's moral life: the Period of Preparation and the Period of Adolescence. Not until the period of adolescence can we or ought we to expect a positive morality. A creature who knows nothing of the abandonment of self, which is the very basis of love, and cannot be learned otherwise, cannot possess the first axiom of altruism. Children are not selfish; a selfish man is one who sees the other person's interest and chooses his own. A child knows only one interest—his own. Children may be actually capable of unselfish acts; but these are imitation: they have been taught to give brother the larger half. The act is based upon a desire of approbation or some other ulterior motive. It is very different from the motiveless instinctive self-denial of a man for his wife, or for his child.

Before adolescence the child may do good from a selfish motive. Of those selfish motives, love of approbation is little better than fear of punishment. Both motives should be used. In this early period the aim of the educator should be the formation of habits which may be built into a positive morality at a later date. This age of habit-formation is a more or less unquestioning age when the child will do things simply because he is told to, and will go on doing them. Habits of politeness, of cleanliness, of neatness,

are in most of us brought from the nursery. How great the influence of the nursery has been in the direction of the minor things of life may be felt in the strange reluctance we have to break even its most unreasonable precepts. Many grown people still continue the "bread and butter first" rule, or feel almost a moral shock when they break it.

The main motive in such habit-formation is fear. Fear is used in guarding against acts which are actually morally wrong. Love of approbation or other positive motives are used when the act is rather superfluously good, its omission no crime. But in every case these methods are apt to introduce a permanent mercenary element.

We would offer up a plea that Fear and corporal punishment should not be too much excluded from schools in the earlier stages. No doubt we treat our children more gently than did the last generation. But perhaps this kindness proceeds sometimes from too ideal motives. Children are not "trailing clouds of glory": *our love of them* is the trailing cloud of glory from God which is our home. They are not unselfish. They are half-formed beings, the material of Society, but certainly not its apotheosis. We reflect our dreams upon them.

So, too, much is to be said for the use of fear rather than punishment. Punishment itself is never as bad as it seems to be. Hence let the punishments be rather looming than frequent, and when they come, I must confess I am rather an advocate of public executions. Many punishments can be saved by making the most of a few. Still there remains the humanitarian attitude—but children are notoriously unable to comprehend it. Public punishment has three arguments in its favour :

1. The creation of a "crowd feeling" against the offence.
2. The creation of fear.
3. The ostracism of the offender (private punishment often gains him sympathy).

The Instinct of Pugnacity. The instinct of pugnacity on the active side is the tendency to fight, on the emotional side it is the tendency to feel anger and rage. The instinct shows itself, of course, very early, but perhaps it begins to become most pronounced from about the age of seven. It is distinctly a "self assertive" instinct, unlike fear. At and after adolescence it shows a close connection with the sex impulse; it is needless to point out that a grown man is most liable to fight on behalf of a woman or a child. The fighting instinct aroused in protection of something weak and unable to defend itself shows itself as moral indignation. An injury to a woman, a child, a small animal, a weak State, arouses moral indignation. It is noticeable also that a female audience is usually an unconscious incentive in athletics.

The strength of the fighting instinct varies somewhat with the sexual periods. For example, sexual stress is often accompanied by ill-temper. Athletics or any similar outlets for physical energy are consequently found of great value as a sexual regulative. Conversely, sexual disturbance and weakness produce a weakening of the fighting instinct. The "worm" above mentioned, the "harmless boy," the "no good at games," is sometimes due to sexual abnormality. On the other hand, sexual disturbance may result from absence of athletic outlet. The boy who has been put against games by too early an introduction, especially if made to play at a young age with boys much larger, sometimes suffers in this way. This is a fault to which preparatory schools are liable. Small boys are not "milk sops," but they are unable to understand co-operative games: the psychological tendency of children up till about the age of ten is to indulge in feats of individual prowess. They do not understand and sometimes not unjustifiably they are somewhat afraid of a football match. Much depends on the first introduction to a game; early unpleasant associations often act as a permanent

deterrent. Very often this little history can be seen in boys who are quite good at sports, but failures in football.

The fighting instinct must be controlled. Rage is one extreme, the mild weak man is the other. A child must gain nothing by a fit of temper. On the other side, every child should be able to use his fists. He should be taught "never to draw without cause nor sheathe without honour." We see no reason why schools should not recognise fighting. It is a strong instinct in the young child: if it is not recognised it will go uncontrolled.

Moreover, it is a desirable instinct. It is, in fact, one of the most important, if not actually the most important instinct of all. It is the basis of true self-assertion. The sense of physical strength and ability to use it is the basis of the power of command. Fighting is the opposite of fear. It is self-confidence, eagerness to attack. Ignorance or inability are challenges. It is, lastly, the basis of physical pride—the boy's pride in his body. That is the foundation of hygiene and physical morality.

The schoolmaster's policy should be above all to bring up the hindermost. In the Technical and Liberal subjects the teacher aims at cultivating the special ability of each boy. But morality and its basis are a need of all. Here the teacher's aim is to cultivate those who are most deficient. Athletes and monitors are not the moral need of the school. Morality depends not upon authorities, boy or adult. It depends on the tone of the school. The tone of the school is the tone of all. It is the minority that needs guarding. Special Athletic Training and Practice for the non-athletic would be an innovation, but an innovation of the highest value.

Lastly, pugnacity manifests itself in other outlets than the merely physical. It shows itself as rivalry, rivalry in class work, in business, in every department of life. The fighter wishes to destroy his foe; the

rival wishes to preserve him as a sign of his powers and in order to fight him again.

It is the highest form of self-assertion ; but it is not exclusive of co-operation. Rivalry cannot be destroyed—should not be, for it is a most valuable incentive. Even if there is none in the school, as the abolishers of marks would have, there will be rivalry in after-life. The only result will be that the rivalry of after-life will not have been educated to be friendly, to be used consciously as a self-tonic, and at the right time consciously set aside.

Society springs out of rivalry. The primitive society in its earliest form is a co-operation for the sake of fighting. This is seen in the animal world. Trade and commerce are accidental, subsequently discovered advantages of society. The foundation of social union is the existence of an opposite against whom we combine. There must always be an *Against*. This is most clear in world politics. In the twenties, France was the Jingoists' watchword in England. Then it was Russia ; now it is Germany. Remove Germany and it would be someone else. If we have not rivals, we find them ; and let them be found as soon as possible if we are to guard against the stagnation which arose from the period of overweening strength. But such rivalry, of course, needs to be reasonable. It must be a tonic, not a drawing away of forces.

So in the school. The child first realises society from an organised dormitory or class rivalry. He realises his own class from its opposition to some other class. The "house" at the public school is felt by opposition to another house. The public school is sometimes not felt as a unity until University days. It is not felt until the boy comes into contact with boys of many other schools.

The sense of society should, therefore, grow through successive *opposed* units : class against class ; then the classes in the school united against another school. Slowly the child learns the final lesson of society, the

difference between rivalry and hatred. He learns it by realising that others may be different, and yet not better or worse : that we set them up as rivals just to add zest to the game of life, that, really, comparison cannot be made.

The problem of marks deserves a word since it has been touched on. Daily marking is plainly a nuisance and a distraction. The best marking is that by the final result of learning, on an examination of the work done. But the child's foresight is short. The terminal examination is far too distant for any but a boy of fourteen or fifteen. Frequent, *e.g.* monthly, examinations quite brief, often oral, are worth the time for the energy they inspire, so long as they do not vitiate the teaching.

But the ideal system is the Subject-group system ; it is the most moral, and it is the most practical. Moreover, it allows many of the ideals to be fulfilled in an extremely simple way. The time-table is divided into many alternative subjects, each subject leading on to other subjects. Thus a simple form such as could be worked in any school on the mathematical side is the following : A certain standard of elementary arithmetic qualifies for algebra, higher arithmetic and geometry ; a certain standard here qualifies for science ; a certain standard in elementary general science qualifies for the specialised branches, and a general knowledge of the specialised branches qualifies for specialisation in one branch.

The examination is not a mere negative test to see that work has been done. It fulfils the proper purpose of an examination—it confers a privilege. It is an entrance to the privilege of learning the new subject. It emphasises the aspect of education which children in free Government schools are apt to forget, that education is not a universal compulsory gift ; it is a right which must be earned and deserved.

Under such a system the examination need not

become a restraint and a perversion. The teacher examines on his own work, perhaps with the teacher of the new subject. He is not preparing for another subject; he is merely complying with a rule that a boy who cannot do simple sums in money has not the right to go on to higher arithmetic. Until the child knows the life-essentials of knowledge he cannot go on to the luxuries.

The boy who fails goes on working at a lower level. In some other subject he excels: he may by a similar system advance in that.

The obvious advantage of the system is not possible in the school of a fixed time-table: there it can merely lead to a slight latitude for special ability in fixed subjects. But in the school run more on the lines of a university where there are many subjects, this serves as the basis of organisation. Each successive grade presents a wider range of choice among more specialised subjects. With each remove the boy passes into a nearer approach to the subjects in which he has real ability, and drops at a pass standard more and more of the subjects in which he does not show exceptional powers. Thus a boy moderate at arithmetic but good at manual work will only have to know just so much of the former subject as is necessary for his new subject, just so much, in fact, as he will actually need in life, and *just the special department of arithmetic* that he will need. Thus through the acquisition of successive privileges the boy finds his special place in life, and the schoolmaster finds where the boy is really worth educating. The system produces an increasing knowledge of subjects according to their nearness to the boy's work, for the easier the course the more general. It gives the schoolmaster an increasing knowledge of the boy, and produces in the boy an increasing knowledge of himself.¹

By this system the boy competes in the earlier stages with other boys. In the later stages he competes with

¹ See chapter xxii for a completer application of this method.

himself. As he learns his individuality, his difference from others, rivalry with others is merged in the sense of the impossibility of comparison ; from that comes a desire of co-operation.

The Instinct of Reproduction. Just as the instincts may in many cases be divided into Positive (or assertive) and Negative, so also each individual instinct may be viewed from two sides—the social and the individual. The instinct of assertion may be an assertion of self as against others, or it may be social self-assertion, the assertion of self with others, the assertion of one's group. Similarly, fighting may be self-protection or patriotism. Fear may be a tendency to save oneself, to trample down others in rushing from a danger, or it may be a fear shared with others, a fear of social dangers and social wrongs.

The social aspect is an acquired aspect, in most cases, peculiarly human. But it has a basis in human nature. The social modification of other instincts must be the outcome of some human instinct, as of Altruism. Altruism must be a hypertrophy of some fundamental tendency of man. Life has but one tendency, the impulse of self-expression. But this impulse has two aspects when it touches practice. On the one side, there is the selfish tendency of assertion. But that assertion, that act of self-expression produces an object expressive of the self. The self-regard is transferred to that object expressive of the self. Hence the genesis of altruism which has modified all the other instincts as described.

Thus out of the Reproductive instinct arises the fundamental idea of society. A few pages back we said that "Sexual love (not using it in its narrow sense of lust, but in its broad and noble sense of the desire of parenthood) is . . . the basis of the altruistic impulses." We imply there two sides to the sex impulse :

1. Self-assertion. A desire for the personal satisfaction of self-expression and self-extension.

This aim is sought quite independently of the good of others. With pugnacity (hooliganism) and the instinct of acquisition (theft and dishonesty) it is the mainspring of crime.

2. Transference of self-regard to the expressive product. The instinct of parenthood is a desire to protect and increase the child which is the expression of the self. The man's influence over his wife, his control and ownership of her makes her also an extension of himself, and his tendency is to protect and esteem her as part of himself. It is a platitude that chivalry is based upon the inferior position of woman, and that the modern feminist movement tends to break down this attitude.

This parental instinct of altruism derived from egoism is extended thence to all sorts of objects, to anything weak, to another person's child, to an animal, to a flower, to the small weaker State in a war. We act to these as if they were our children; it is a self-extension to protect them. Out of this parental regard for others human society arises: social altruism and co-operation are extensions of the relation of parent and child.

The Instinct of Sex and the Instinct of Parenthood. The tendency of the individual is to satisfy his selfish sex instinct as much as possible. Society demands that with the egoistic impulse must go the altruistic—of parenthood. The individual tends to reproduce frequently almost irrespective of quality. Society demands quality and care of the children. It demands, in fact,

- (1) Sexual self-control;
- (2) Parental responsibilities.

The egoistic impulses may be controlled by society in two ways. Thus the egoistic impulses in fighting are controlled by the laws of sport which it is disgraceful to disobey—this is Taboo, or, secondly, by

a reasonable understanding of the aim for which the society has been formed, and a realisation that fighting for oneself will destroy the co-operative efficiency of the society and prevent the attainment of the aim which all desire. Similarly, the sexual impulse is controlled first by the Laws of Taboo, the arbitrary moral laws of the community, or, secondly, it may be controlled rationally by an intellectual comprehension of the purpose of society and the relation of the sex impulse to that society.

The arbitrary laws of Taboo are habits of thought formed through the influence of fear. They are products of the early preparatory stage of morality corresponding to the early stage of Habit-formation in the life of the child. Moral reformers and a process of blind experience have evolved these laws. They form a habitual morality for the tribe which takes the place of rational understanding. Their sanction is largely of a religious nature, which enforces them by fear.

Moral Unrest. At the present moment we see a dissatisfaction with this "Habitual" tribal code in the matter of sex. The religious sanction has to a certain extent been undermined by anthropology on the one side and by eugenics on the other. In some cases the taboo is thought too stringent, *e.g.* in the matter of divorce. In other cases it is obviously deficient, for religion does not forbid the marriage of the insane.

The revolt against the social taboo tends to go on egoistic lines: "Society treats me unjustly. Its precepts are obviously absurd and they do not suit my case. I shall abandon the social canons and use my own judgment." And the individual judgment tends to settle the matter on lines not of social profit, but of individual profit consonantly with absence of obvious social harm. Instead of "What is the social aim which the Taboo-precept crudely represents?" we hear "What is my aim? Does it seem to harm

society?" Hence we see in the Problem novel a demand for exceptions and special cases.

This same crisis occurs in every boy's life, and particularly in the life of the boy of to-day. He passes from the preparatory stage of habitual morality to a stage where he is called upon to use his own judgment. He finds the maxims of the early stage, which were makeshifts suited to his lack of comprehension, narrow in some places, wide in others. He throws out the Taboo and starts to evolve an intellectual control of his own.

A child of the last generation in England passed from the laws of the nursery to the laws of the Church. The child of the present tends to pass from the laws of the nursery to no laws, to his own intellect and imperfect understanding.

How shall we meet the problem? On the one hand, the taboo is narrow and inconsistent; on the other, the intellectual control is egoistic: it does not bar a childless marriage. Is modification or adjustment of the "Habitual" law impossible? Or is complete revolution against it sure to come? The best that the schoolmaster can do is to guide that intellectual examination along the most profitable lines. He must meet that new intellectual ethics of the child as a certain fact and train it to a social purpose. It seems as if at the present such training is particularly necessary. We do not mean by this the moral lesson—a story illustrating honesty or any other of the cardinal virtues. We mean rather an explanation of the basic principles of society given to the adolescent before he passes away from the school and from control.

Moral Training. In his attitude to sex the child does very largely "follow the history of the race," whether accidentally or by some common law.

In very early adolescence there is a period of scatology or Dirtiness. This has much in common with the indecency of the Middle Ages and of backward

peoples of to-day. The child is not able to comprehend the real meaning of his fault. All that can be instilled into him is that it is a very serious one. It should be treated on a different level from other moral offences, such as cheating or theft. It is a thing by itself ; its punishment involves social stigma, disgrace and disgust. For this public corporal punishment is usually employed. It may be urged that a child who has been once thus disgraced can never hold up his head again in the school. But all children's memories are very short. The ostracism, while it lasts, is severe ; but it soon passes over. Only the one boy remembers.

Later, usually in the home, there comes a period of chivalry arising out of the first love affair. This usually forms a very important epoch in the boy's life. It is the beginning of romance ; it usually colours all subsequent history.

The religious awakening which may come before or more usually after the above is frequently associated with some form of puritanism or asceticism. This, again, is an important epoch. Often psychologically very abnormal, it yet serves its function. It is a period of self-mastery and of living up to the highest, even preposterous ideals, of which ever after we are proud of though we would not repeat it.

This usually merges into a period of more or less philosophic thought. It is a less impulsive, more solid state than the former. There is sometimes a set against emotionalism. In any case, there is thought as to the place of emotion and of sex in life. In neither of the above stages is adult interference desirable unless it be actually called for. It may be called for, but, if offered without request, it will be indignantly rejected, and much harm have been done. It is difficult for the adult to know how to meet the boy's philosophic and religious needs. Boys do not ask questions. You merely see them looking round. A talk would be resented. Moreover, one would probably talk off the point. No one can tell what a boy at this stage

is thinking of. It does not matter much so long as he is thinking. The best reputation that a teacher of boys of this age can possess is that of a good listener.

The adolescent does not need advice nor "jaws," still less the hypocritically veiled "chat." He needs a listener who will approve, who will say, "Yes, that is on the right lines, I think. And what do you think of . . . ?" The only positive work needed is the suggestion of materials for further thought, questions, or perhaps books. But even that is dangerous. The boy is a contrariant, and what other people know or recommend has no interest. He wants to discover. However, the teacher can sometimes "salt the mine."

On the more positive side, we doubt if the disciplinary treatment of sex matters should be merely punitive. It assumes that the master is perfect, and that the lapse is an incidental fault, not a perpetual problem. Except in the grossest instances, it is better to restrain one's moral indignation and remember one's past. The schoolmaster's duty is to guide, not to revenge. It is petty to thrash a child for failing in the greatest problem of life. What is the schoolmaster there for but to guide? He should thrash himself. Corporal punishment has its place, but it is only part of a formative process.

Much is to be said for information through biology and science. But we would add in the later stages an actual study of heredity and of simple non-controversial eugenics. The child must realise the right he has received in being born whole and sound, and the responsibility which that right entails. He must realise along with this, his place as a member of society, and parenthood as one of his greatest social responsibilities.

One further point of instruction is worthy of note. The attitude of the boy, especially the boy brought up in the mono-sexual school, towards woman is often excessively silly. It is sometimes an attitude of

ridiculous contempt. Sometimes this is disguised under the ideal of the muscular "not-a-ladies-man." This attitude is usually associated with a notable absence of good manners. We do not quarrel for one instant with the muscular ideals of the English school. Those muscular ideals aim at producing a sturdy morality. But we have little respect for a morality which does not teach a boy to honour the sex of his mother. There is no need to produce "dancing masters." Boys should realise that these politenesses are the external signs of the mute acknowledgment of an obligation and a responsibility. In politeness to woman we acknowledge what we owe to one woman and our readiness to repay it.

The Hygienic Aspect. The Hygienic aspect of this instinct has been sufficiently treated in many books. From the doctor's point of view the period of its development is a most troublesome and dangerous epoch for the body.

Many of the adolescent's mental troubles arise from physical causes. Special diet is highly desirable, and very careful arrangements with regard to sleeping. Excretion also needs special care: the majority of cases of melancholia and anaemia in school children arise from irregularity in the "after-breakfast duty." Moral troubles too often take their origin in ill-health.

Physical self-expression in construction, scientific work, and athletics, should form a large part of the adolescent curriculum. The holidays as well as the term should be well filled. Travel is good for those who can afford it. An excellent idea, practised in one case of which the writer has heard, is to put a boy on a farm for a month or two. Physically it is excellent and mentally it is good, and above all morally. It is hard work at man's most natural occupation.

The school course should allow the utmost freedom. There should be little class work, much independent study.

What is learned at this stage matters very little. The great thing is that the boy should find out what he wants to learn. At this period special aptitudes are found. The discovery of the child's real special gifts is the most important task of the schoolmaster, for on it the child's future life and future function in society depend.

CHAPTER XV.

THE ADAPTIVE AND SOCIAL INSTINCTS.

The Adaptive Instincts. These instincts lead the child to learn the world around him, to adapt himself to his world ; above all, he learns to adapt himself to society. Three instincts are grouped under this heading—Play, Curiosity, and Imitation.

Play. Play is the tendency to expend superfluous energy. The question of the recreative subjects has already been sufficiently discussed. The child needs to learn to play and to work, and a clear distinction should be made between the two.

Curiosity. Curiosity is an appetite for new experiences. This were better defined as an appetite for new opportunities of action. The unknown is interesting as an opportunity of doing something new. The direction of curiosity will depend largely on the child's other instincts and on his powers—viz. on what he wants to and is able to do.

Curiosity manifests itself first as an interest in actions:

“ Why do you do that ? ”

“ How do you do that ? ”

Later, when the child has mastered the use of his own limbs and proceeds to the employment of external tools, an interest develops in things, “ What is the use of that thing ? ” and “ What sort of a thing is that ? ” i.e. “ What can I do with it ? ” At a still later stage the child's curiosity is directed towards laws. He wishes to bring each new phenomenon under some general preformed class.

A child is liable to the danger of idle curiosity because his activities are as yet undetermined : he is potentially a "Jack of all trades." His purposes may be many, yet he should be encouraged to learn systematically, even if impulsively, for a purpose, and to appreciate the relative values of facts for their bearing on practical needs. The object-lesson method only encourages aimless curiosity. The teacher should remember that in no case has a child the scientific appetite for mere knowledge : his questions have always an underlying practical significance.

Imitation. Imitation is the tendency of an idea of action to result in action. The sight of a man lifting a box stimulates many of the same areas as would be excited were I actually to lift a box myself. Hence the excitement of these areas by seeing the act performed by another tends to pass out into action in one's self.

It is doubtful if we are justified in calling this an instinct. It is rather a characteristic of the mind as a whole. On the other hand, it is an innate adaptation to the environment of the very highest importance, for it is the chief means of learning.

Development of Imitation. (1) The first stage of imitation is known as the Reflex stage. This is a purely unconscious imitation. It is usually an imitative stimulation of an action to which there is already a physiological tendency, as, for example, yawning. This form of imitation has great influence in the early stages of the child's life, for by it he acquires from the mother and the nurse his largest stock of mannerisms. Small children (particularly girls), seem almost to ape their parents. They walk and talk in exact imitation of the mother : the expressions on their faces are the same ; their tiniest unconscious mannerisms are the same. This is not the result of a deliberate imitation ; it is a purely unconscious realisation of the child's sensory experiences in action : what he sees done he tends to do. Most of the child's external resemblance

to his relatives is derived from this. But the influence extends further, for the mannerisms tend to produce the corresponding mental states of which they are (in the mother) an unconscious expression. The mother's irritable manner is reproduced by the child and tends to produce the irritability itself which was the primal origin of the mannerisms. By this means there is an emotional imitation of the parents. The parents may not express opinions; they may deliberately conceal their emotions; but their attitudes are imitated, and thence by an automatic process their opinions are derived. The mother's attitude to visitors is unconsciously copied by the child, and her personal likes and dislikes seem almost miraculously discovered and reproduced. The child has no reason to like Mrs. X. nor to dislike Mrs. Y.; nor yet is there any apparent ground for his knowing the mother's like and dislike. But by this unconscious imitation the child becomes a most sensitive thought-galvanometer. Every attitude is reproduced: the mother's attitude at church time may be the germ of the child's religious opinions.

(2) The second stage is spontaneous imitation. Here the child consciously reproduces details of his everyday experiences as they occur. Thus he will mimic the bark of a dog, the noise of a saw, and the motion of the arm. This monkey imitation starts very early in life. It contributes greatly to the acquirement of skill. Largely by this means the child learns to talk and to walk, besides many other acts of everyday life done by the nurse or the parents, tying a bow, blowing one's nose, doing up buttons, etc.

(3) In Dramatic imitation we have the reproduction not of a present stimulus but of a past perception. Moreover, it is not the reproduction of a single stimulus or act, but of a group of acts, often a very complex group. Thus many past experiences are grouped together into "Playing at Church," or "at Shop," or "at Soldiers." Dramatic imitation is distinguished by two important marks. It is far more voluntary

than the Spontaneous. A child imitates the cry of an animal consciously, but with a very small effort of the will: children are found who imitate unconsciously, whereas dramatic imitation involves actual decision, organisation, and planning. Secondly, it involves selection and synthesis of ideas. The environment is not reproduced as it is. Particular scattered elements are chosen and recombined to make a whole.

Dramatic imitation is largely of persons—of clergymen, soldiers, etc. It involves in every case a change of manner and a readjustment of personality. The child puts himself into the mannerisms of the clergyman: these mannerisms tend to reproduce the personality of which they are an expression. Thus the child's dramatic play becomes an important element in the formation of his character. For thereby he absorbs the characters of others and enlarges his personality. At the same time he gains an insight into the characters of others.

We know other people by "putting ourselves in their place." This process of "putting oneself in their place" consists in building up the personality of someone else out of the materials of one's own. By omission here and exaggeration there one is able to form an approximate model of the complex of tendencies which constitute the character of the other person. This is seen in mental pathology: it can be artificially produced by means of hypnotism. But the fixed and organised mind of the adult finds it difficult: the character is set; the tendencies are closely bound together and co-ordinated; they are incapable of separation or alteration. The mind of the child is not so fixed. His tendencies are not co-ordinated. Hence his power of adjustment and of learning.

Lastly, Dramatic imitation involves the acquirement of many useful acts. These acts are often not as useful as they might be because the materials are not sufficiently real. The more opportunity for reality given to the child in his play, the more valuable that

play becomes. But it is better to give the materials and the instruction for constructing reality rather than the reality itself ready-made.

(4) Voluntary imitation. We have here imitation not for its own sake as in Dramatic imitation but for an external purpose. Spontaneous imitation of a carpenter is a monkey imitation: Dramatic imitation gives a specious representation merely for the sake of representing: in Voluntary imitation a child imitates a carpenter because he wishes to learn carpentry. So, too, he imitates a clergyman or a soldier because he wishes to acquire the manner and the character of the particular model. It is a means, therefore, of—

(1) acquiring craftsmanship,

(2) acquiring character.

With regard to the first, it is well for us to remember in teaching that language is a very imperfect instrument to the child. The meanings of words are very vague to him because there is so small a background of experience to give them connotations. In fact, a child has far more words than he has meanings. An explanation is useful to a grown man because it correlates the new fact or action with a large range of past experience. The older one is the more one tends to learn in terms of the past, owing to decrease of the natural learning power of the brain. Hence a greater use of words. But this is not the case with the child. His mind is naturally receptive. He does not need to, and he does not naturally tend to, associate new ideas with what he has learned already. Explanation expresses the new in terms of what we already know. This is useless to the child because he does not need this assimilation, and because so little is "already known." It adds meaning: philological explanation gives meaning to an otherwise meaningless collection of syllables; scientific explanation assigns a reason for otherwise meaningless acts; classification adds rationality to an otherwise haphazard list. Such things are not needed by the child. And words are the worst means of

conveying to him information. Let us always consider, therefore, whether an explanation is needed by the children before we give one. That it would be useful to ourselves is no argument: we are old.

Above all let explanation be avoided in the manual work—

“Take a piece of notepaper. Tear it in half. Fold the half sheet thus obtained so that the top edge lies parallel with the left. Fold again so that the right hand top corner corresponds with the left hand angle. Fold the triangle thus obtained so that the base angles coincide. Fold so that the acute angle of the resulting right-angled triangle falls on the right angle. Cut this down the centre. Arrange the resulting pieces in the form of an altar with candles and steps.”

If you saw this done you would learn it in two minutes, but to make it out from the description (which I have put as clearly as I can) is extremely difficult. Cookery recipes, directions for dealing with fountain pens and mechanical toys show the same inefficacy of words. The explainers usually fall helpless into diagrams. The natural way of learning action is by imitation. The child's natural way of learning everything is by imitation. Even his arithmetic he learns not by explanation but by working out sums in imitation of the models.

A further point. When we are teaching a subject like history, is knowledge or action the aim? Can this, or should this, be taught by imitation? Clearly it is not the facts that we are teaching, for what are all the facts that can be taught in the school period in comparison with the whole subject? We are teaching how to study, giving an impulse along a certain line of interest. Study is an activity, and the way in which the child learns to study is by imitating, by imitating his teacher.

If we gave up a great part of our teaching, and

merely let boys watch us tackle a subject, and then tackle a similar subject themselves, we should find the results much better. Whether we teach or not, all that the boys really learn is our attitude and way of approaching the subject. Time erases the details of our lessons, even memory of the lessons themselves. All that remains is a general attitude to the subject, and perhaps—if we did not teach too much—power of studying it.

Books know far more than any teacher, and they are always accessible: why do we make our pupils obtain their facts from so exhaustible and so transient a source as ourselves?

Voluntary imitation is, secondly, the chief source of character and of the attitude to life. This is the teacher's greatest influence upon the boys. But they imitate just the things of which he himself is least conscious.

The Social Instincts. Society has arisen from an instinctive need and a practical need. The instinctive need is, first, the parental need of someone to protect and of self-extension; secondly, the gregarious need of the company of others. The practical need is the need of co-operation instead of conflict.

A man may have social instincts; he may have the parental feelings, and desire for the society of fellow-beings. Yet he may be a bad citizen because he does not understand the practical intellectual organisation of society. On the other hand, he may manage himself rationally as a member of the intellectually organised society; yet he may be a bad citizen because he lacks real social feelings. His citizenship is empty and formal. Both things are needed. Let us consider the instincts first.

The Instinct of Self-abasement. This is the opposite of the instinct of self-assertion. It is the learning, obeying, imitating attitude. Without it man would be an ignorant and proud tyrant. He would do good only in so far as it suited himself. He would be utterly unappreciative of the merits of other people. He

would desire fellow-beings only in so far as they ministered to his pride. He would be ignorant because he would never see his limitations or feel the necessity for self-improvement.

The attitude of self-abasement is that of the servant to the master, of the child to the father. It is classed as a social instinct because it is the basis of the negation which society demands. A set of purely self-assertive people could never join into a society. Society involves the giving up of a part of one's self, and conformation to the needs of other people—not always, but sometimes. It is a give and take. By submitting to other people we not only serve them but we serve ourselves, for we obtain the benefit of their help (which an assertive man would never accept) and of their knowledge (which an assertive man would never need).

The instinct of self-abasement is evoked by prestige or obvious power on the part of the commander or organiser of co-operation, or teacher. Prestige is shown by quietness, reserve, mystery, infallibility, self-confidence, and above all independence of other people. The assertive man is not the commander. The commander and the disciplinarian is the man whose mind is fixed upon action, who does not talk, and who is not influenced by other people.

Obedience and suggestibility arise from a lack of mental co-ordination. The mind is not organised round definite and clear purposes. Problems of action or suggestions of action are not referred to these purposes, "Do I want to do this or not?" They merely arise and pass through without questioning or investigation. Suggestibility comes from practical incompetence; the man who cannot do (even if he can think) is by his psychological nature servant of the man who can do: the subjective self-centred man is always controlled by the objective man of action. Suggestibility is partly due to physical weakness; the sense of physical weakness always predisposes to obedience. It is due to training: long severe discipline produces a per-

manent attitude of abasement. Lastly, a man in a crowd has usually an attitude of self-abasement; his personality is lost in the mob-personality. Hence the members of a crowd are extremely liable to influence.

In brief, the power of command depends on a sense of self, a sense of strong self-organisation and centralisation. The attitude of abasement arises from a sense of being without a centre and without compactness.

The attitude of abasement has, therefore, a very definite place in society. Without it society cannot exist. But in excess it is a sign of weakness: and excessive discipline produces weakness. The "good" boy is a weak boy, a boy without personality. Self-abasement should be deliberate, the result of the act of will of an organised personality. It should arise from a definite admission of superiority and of desire to learn. It should be Following, not Being Led.

The attainment of this is the most difficult work of discipline. The child's mental organisation makes it necessary that he *should* be led up till adolescence. But at that age, or rather gradually up to that age, a change should be made aiming at self-completeness on the part of the child, so that when he obeys he consciously obeys with an admission of right to command. This attitude can perhaps best be cultivated by putting the matter on a rational basis, by teaching the boy the law of duties and rights, that the Duty of obedience involves a right to assistance, and that the Right of command (where he possesses it) involves a Responsibility or Duty to assist.

The Gregarious Instinct. Man is born one of a species. Hence he is attracted to his kind and feels the need of their society. There is a dual reason for this. Firstly, the negative self-feeling or self-abasement obtained from being one of a crowd. It is a rest to the sense of responsibility and individuality to lose one's self for a short time, and to follow in a flock. After several weeks of complete loneliness this

is particularly noticeable. To go into a crowded restaurant is to lose the almost oppressive sense of being entirely on one's own, and of everything depending on one's own efforts. Man is one of a herd : any long separation from the herd is not natural to him.

Another motive besides that of rest and temporary loss of responsibility impels man to the herd. For with the rest to his own personality he gains the increased self-feeling of the crowd : he gains the larger individuality of the mob. Instance the exalted sense of being one of a school or one of a regiment. The sensation is really that of "being a regiment" or "being a school."

This instinct has great influence on the life of the town. The Parks on Sunday, the streets in the evening, the big spectacle—a procession—are instances. There is nothing really very attractive about the barren streets when the shops are shut ; there is nothing very attractive about the large restaurant where the food is notoriously bad and the attendance worse. People go because other people go. The towns themselves are monstrous instances of the gregarious instinct. Not one-half of the inhabitants need really live there in the expense and the smoke. They live in the town "because they like the town," because of the attraction of the herd.

Although this instinct is so important a basis of society, it is an extremely dangerous one, and most of all is it dangerous in the school. Its chief danger lies in that it is apt to be mistaken for a good thing, for a means of character formation, for the highest social feeling.

The gregarious instinct is the impulse to make a crowd. In a crowd the personality of the individual is lost. The mere desire to join a crowd is a sign of weakness. It shows absence of self-confidence and power to decide for oneself.

In the place of the individual personality a mob-personality is substituted. A mob and a herd are

the same thing. A herd is liable to stampede. Solitary animals do not stampede. The psychology of the mob has been most carefully studied because it plays so large a part in modern, especially in political, life. A crowd is purely emotional. People can feel together, but they cannot think together. Hence crowds are liable to suggestion. An individual can counteract emotional suggestion by thinking ; reason is the natural antidote. But the individual's power of thinking is lost in the mob : the crowd can only feel : and it will feel whatever it is told to feel.

The herd is particularly liable to destructive emotions, a primitive form of self-assertion. In so far as democracy is based upon mob-judgment it is bound to be either fickle and irrational or a farce. If the will of the mob is carried out, the politics are irrational. If it is not, then the crowd is merely gulled and a policy is carried out over its head.

The best antidote to mob-feeling and mob-politics is an educational system which aims at individuality, not merely in thought but especially in character, an educational system which eschews emotionalism as poison and aims at rational social purposiveness. Does the school endeavour to achieve this ?

We hear much in school life, particularly in the famous public schools, of *esprit de corps*, or of its synonym "THE SCHOOL." This is heard in the big hall, and in the chapel. It is heard at the football matches. In a smaller degree we hear of "THE HOUSE." We hear also the maxim, "Be an X . . . tonian," or X . . . arian, or X . . . urian, according to the name of the school. The members of these different schools are very easily recognisable. The school stamp upon its members is very distinct. The aim of the school X-ton, or X-borough, or X-ingham, is to produce X-tonians, X-burians, or X-inghamians. We hear the counter accusation that these schools neglect individuals ; the exceptional boy tends to be crushed under the wheels. This, we hear, is necessary

for the sake of the majority, for the sake of the character of the school.

Undoubtedly a distinctive character is of great advantage to a school. This character is usually a generalised edition of the ideals of social grade or class from which it draws its materials. But that character should be a starting-point for infinite variations. It is an accident rather than an idol. It is a starting-point for character formation, a point of departure, not a goal for assimilation. A school character has its value just as a national character has its value. But a national character is valueless unless it is based upon an infinite number of individual differences. A national and a school character is an epitome of innumerable variations upon the same theme.

The school or national character is always very narrow. It is less character than any real person could possess ; because it is an over-emphasised summary of the few common points of many characters. It is a composite caricature. If it were more detailed it would not be representative. If this character be taken as a mould and a model, it is clear that in order to conform to it the boy will have to give up character. It is not so much necessary to acquire as to abandon characteristics in order to become an X . . . ian. The mould was never intended for this use. It is intended as a clear basis in which to build up different individualities, individual interpretations (according to individual powers) of a certain view of the social being, the X . . . ian view.¹

The schoolmaster should aim at a common moral basis but the utmost difference of individuals. But this is not always done.

Most of all, the means adopted for producing the X . . . ian must be objected to. For the schoolmaster is in very grave danger of mistaking mob-feeling for school-feeling and for character formation. Crowded and enthusiastic gatherings in Hall may have

¹ For further discussion, see "Ideal Construction—The Boy."

a social function, but they certainly do not produce individual character. They have their uses as making a school, just as mass meetings have a use in making a Trade Union. But the aim of the school is not the same as the aim of the Trade Union. The Trade Union aims at producing not individuals but a society. The school is made a society only to produce social individuals : the social functions are secondary to this. These gatherings in the school should occupy the place which they will occupy in life. The boy must learn what attitude to adopt to such things. It is a part of his training. These gatherings are an expression of social feeling, a strengthening of the emotional bond, valuable but dangerous, never a substitute for the true basis of society, calm altruistic thought.

The Instinct of Construction. This instinct has two aspects : first, the desire of being a cause ; second, the desire of making something for someone else. The first is assertive and egoistic ; the second is altruistic. It may have two motives ; it may be purely altruistic, as when the father constructs a home for his offspring, or it may be indirectly egoistic, when the aim is a personal or social approbation.

The desire of being a cause is a desire to change things. It may equally lead to destruction. The child wishes to see the result of his work. So long as it is a big result he does not mind whether it is a big house made or a big house destroyed. Destruction is always egoistic. But construction on a large scale may be made a substitute for the child's destructive tendencies.

Constructive art is always more or less altruistic. There is always a motive of others' pleasure or others' approbation. One might doubt if an artist ever painted a picture purely for himself.

Which motive should be used for the child ? The first, of being a cause, is stronger. It is desirable that the child's manual work should avoid the finicking. Children have little pleasure in perfection or detail. They want to see big results. This is right on the

physiological side, for fine work is bad for the child's eyes and nervous system. From the point of view of the psychology of habit big work is also to be recommended, for the large movements are acquired first. Let young children make earth-works, scientific mud-pies. Let them model large in clay, or work with large sheets of easily cut cardboard. The result will be a mess. But the acquirement of skill is not only a learning to do perfectly successive things of increasing difficulty; it is a learning to do various things better and better. This is also the more interesting way—perhaps because it is the more natural.

At adolescence desire for detail and finish appears, and with it greater independence of ambition. The teacher becomes less of an instructor, more of a critic and adviser. At the same time the altruistic motive appears.

The value of the constructive instinct cannot be over-estimated in moral training. Intellectual work is individual and non-cooperative. It can be made co-operative, but it need not be so: it is not essentially so. The essence of manual work is co-operation. Out of the needs of making, the need of specialisation and differentiation of labour and of exchange, modern society arose. It is born anew in the school out of the needs of the individual boy, in practical work on material. If we look round the schools to-day, just where there is most physical work and practical thought there is most moral training—in athletics, in science, in manual work. In these subjects there is a natural tendency towards social organisation in the class which the Knowledge-class-room¹ subjects never call forth.

CHAPTER XVI.

LANGUAGE AND THE INSTINCT OF SELF- EXPRESSION.

The Instinct of Self-Expression. Under this heading the question of language is usually treated. Properly the instinct should include much more than this. The tendency is more than an instinct ; it is the direction of the life impulse. Every act is a self-expression : the tendency of life is to express itself ; in fact, Life might be defined as an Impulse of self-expression. Thus all the instincts treated so far may be called impulses of self-expression ; Fighting is expression, so is reproduction in a very high degree ; gregariousness is a self-expression, for it is the expression of a need inherent in the nature of the self.

This may seem a mere psychological cavilling. But it has a most important bearing for the schoolmaster. We are discussing in these chapters separate things which the child tends to do, separate forms of self-expression. We are inclined to regard Instinct and Self-expression as one chapter in the child's nature, as it is one chapter in this book. A child has sensations, perceptions, memories, feelings, emotions ; he has also instincts, on a par with these. In this we are wrong : the child is a vital active impulse in a world of inert plastic matter. The essence, the reality of that being is to manifest itself in that inert plastic medium. Its simplest form of self-expression is the building up of its own body : its completest form of self-expression

is the building up of another being's body—reproduction.

Between these two extreme poles runs the whole gamut of various other self-expressions, many or most of them subservient to one or other of these two ultimate aims, the egoistic and the altruistic. This range of self-expression is the life of the child. Subtract self-expression from life, and Death or Negation remains.

Until we can look upon the child in this way, we cannot be good schoolmasters. So long as we think of him as a plastic being, we are thinking simply in terms of the inert material on which our own instincts act, not of an active vital being like ourselves. That is the fallacy to which Education is liable; it results in Teaching, in Moulding, in Character FORMATION. All these are the metaphors of the Materialist education. A force—an electric current, for example—cannot be moulded or formed. It can be directed; it can have channels provided for it; it can have materials on which to exert itself. But the force itself is the Former, the Moulder.

Teaching itself is a kind of self-expression on the part of the teacher. It is an endeavour to mould a vital being into the image of oneself. This, too often, is what the schoolmaster endeavours to do.¹ Whereas his duty is to direct the children's self-expression, and he does that most of all by arranging the inert plastic world as playthings for their energies.

Language. Man has evolved a form of action which serves as a substitute for real self-expression. Real self-expression consists in an action which produces a permanent result in the world of matter. Language is a minute representative of such self-expression. Thus a few movements of the mouth represent the real self-expression of "building" or "destroying," etc. Thus language is a substitute for self-expression. An animal can only do; a man can talk about doing, can talk *instead of* doing.

¹ See chapter, "Ideal Construction—The Boy."

This gift arises from an instinctive need ; and it serves an intellectual purpose.

It arises from an instinctive need. The same (gregarious) instinct which prompts us to mingle in and share the emotions of a crowd, prompts us also to communicate our feelings to others and receive their communications. A man can thus obtain community of feeling without the sympathetic influence of an actual crowd. This tendency to express feelings is found in animals, in their inarticulate cries of excitement, joy, or anger. We have here the same tendency as that which prompts a man who has gained a success to go and tell his friends.

Man has developed the animal's simple form of expression of feeling into a far more complex expression of idea. Feeling runs parallel with action, and the expression of it is the expression of a certain overplus to which action does not give vent. But the expression of an idea involves a delay of action, a diversion of the active impulse into an alternative channel.

This diversion serves three purposes. By providing a means of delaying action, it enables man to think before acting. By giving man a coinage representative of possible actions and results it assists his thought. Lastly, just as the expression of emotions produced a community of emotion, so the expression of idea produces a community of idea. This communication of idea enables man to co-operate, and thus lays the foundation stone of a society.

The Mother-Tongue. The child's acquirement of his mother-tongue is based upon the satisfaction of certain instincts. The initial practice in articulation is gained by playful meaningless shoutings and gurglings. He is playing with his voice. Later the child's play becomes imitative. The imitation is of the parrot kind. It is an imitation of the general noise and inflection ; there is no endeavour at meaning. Later still the gregarious instinct brings the desire for sym-

pathy, hence a need of self-expression and of the power to understand others. The more complex needs of Self-Preservation demand speech for their expression. In response to these two needs of sympathy and of self-preservation, the child sets about acquiring language by more deliberate imitation.

Language and the higher grades of thought go together. The complex general ideas of which most of a language is composed are only possible in virtue of group-names. Thus at the same time as a child is learning to talk he is also learning to think.

Thought consists in fitting a reaction on to a stimulus. Millions of stimuli come to the child. Each stimulus respectively has to be fitted into one of his *few* (compared with the number of stimuli) possible reactions. The result thus attained is an action, and grouped round it sensory memories of the various stimuli to which it is appropriate. This class is designated by a word, a noun. Thus "Bread" connotes certain uses or active attitudes, and denotes many objects very different in appearance to which this group of actions is appropriate.

The process of class-formation is greatly aided by the existence of class names. The hearing of a class name encourages the child to form a class. Thus hearing the word "bread" applied to one object, then to another, he is encouraged to neglect external differences and find (probably by experiment) an identity of suitable reaction. So, too, hearing apparently similar things, *e.g.* Bread or Cake, called by different names he is encouraged to form a new response and to collect a set of instances round it.

The following idea of a child's acquisition of language needs particular avoidance. One sometimes sees the slack statement that the child hears the word (*e.g.* Book) applied to the object and immediately associates the word with the idea, and thus learns his language. But the word book may be applied to very many widely different objects. How can the child know

precisely what this word means? What is the real essential of "book" so that he will know what to neglect and what to observe in recognising a future object of that name. Is it the colour? Is it the upright oblong shape? Is it the size? The statement that the idea is immediately associated with the word is wrong for this reason, that the idea has not yet been formed, that it is the word which prompts the formation of the idea. The child hears the word "book" applied to many different objects and gradually discriminates what is the essential of book, what the real active meaning or use is, and what in the appearance of the object is essentially connected with it. The learning of the word is a part of the learning of the idea. The word may be a vessel taken at the end to put a formed idea into, or perhaps more usually it is a jar given to the child to fill.

Language develops in the child from the use of words to the use of sentences: at first one element of a situation is picked out and recognised as belonging to a class. Thus a baby points and says, "Dog." Later, the relations of classes are realised; "Dogs are pets." Or classes are analysed into their sensory features, "Insects are small," or their active meaning "Wasps are dangerous."

The advent of written language marks a great advance. Writing arises from two main needs, that of a permanent record and of communication at a distance. In the first case it overcomes time, and in the other it overcomes space. It gives the opportunity in both cases for a deliberate perfection of thought owing to its greater permanency.

It is advisable that the child's introduction to writing should come in response to a real need, a need of communication at a distance, *e.g.* writing to mother on her holiday, or the need of a record. The teaching of this art, and the correlative art of reading is a most difficult problem. For these most difficult processes have to be taught to the child at an age when physiologically

and psychologically he is most unfitted for them. Neither children's eyes and hands nor their brains were meant for the minute motions and intense attention of writing or reading.

The study is, moreover, destitute of any inherent interest. The value of the alphabet is not understood, and pot-hooks are not appreciated. This is not because they cannot be appreciated, but because teachers do not see the use of gaining the child's appreciation. He himself (or she) is satisfied of the value, but does not bother to satisfy the child. Rather teachers tend to devise new methods of overcoming the physiological and psychological difficulties, and of adding *extraneous* interest to the proceeding. It does not occur to them to add the subject's own interest. The result is that children take a preposterous time to learn to write and read, far longer than they need take even making the very fullest allowance for their natural disadvantages. They take so long because they have no interest, or only an irrelevant interest of pictures or coloured letters, or some other device. It is said, and with truth, that most children are not taught to read, but when their time comes they learn to read of their own accord.

What is the suggestion? That the child be made to feel a real need. If this is done we may abandon all our teaching devices. All that is needed is an absent mother or nurse to whom the child wishes to write, just as the nurse writes to him; and, secondly, someone who refuses to read the child's letters for him, who tells delightful stories, but will never finish them. One might almost venture the statement that ninety per cent. of children learn to read in order to finish a fairy book of which only part has been read to them.

The same applies even to the child's learning to talk and to walk. Many parents delay the acquisition of these arts by wantonly removing every stimulus. They take the trouble to interpret the child's crude gesture language: they fetch the child's toys for him instead of letting him try to walk to them. The child does

not think ; he is not consciously idle, but the stimulus to learn never reaches him. A cat will not catch mice if food is provided, and a child will not walk if someone else will walk for him, nor talk if he can make himself perfectly understood without it. Nor read if others will read to him ; nor write if others will carry messages. Why should he ? there are no stimuli.

The Second Language. A second language is taught as a means of communicating with a different people, either directly through speech or indirectly through books. The same question of the Necessity applies here also. If the child is to learn quickly and well he must *want* to learn, not for the sake of an irrelevant bait, but because the language is of obvious and direct use to him. If a boy knows he is going abroad he will learn to speak French ; if there is some foreign book he wants to read, he will learn to read it. If he sees that the language will be needed in his career (of which even the youngest boy thinks much) he will learn it.

It may be true that a young child has a somewhat greater aptitude for the acquirement of a foreign language than an older child—that he has a better rote memory. If the child can be taught his second language simply by hearing it in the nursery, and at meal times, and in the incidents of the day, there is an unconscious picking up which requires no motive. But if we start teaching the child at eight or at nine, either a motive must be found or we should economise trouble and time by waiting until a motive is found. The smallest Indian child knows the need of English ; but the smallest English child does not know the need of French, usually because he may not need it. When he does need it his interest will make him learn a great deal quicker than he would have learned at an earlier period without interest. Half the value of learning even in the earliest stages lies in seeing the need. Children can appreciate needs, and they do. They are very critical of what they learn, and when they do not see the use they will not learn. They can be

made to : but the only learning of value for life and for character is that which is a deliberate self-adaptation to foreseen needs.

For this reason we should perhaps be more careful in setting things to be learned early, for the supposed reason that the child's brain learns better at that time, irrespectively of necessity or motive. It merely results in our setting the child (who has plenty to do already) things to learn before we really know whether he will need them, and certainly before he is capable of the smallest degree of co-operation.

Undoubtedly later on when we find that we do need the language we tend to weep and lament, "Why did I not learn this earlier!" This is only another way of saying, "I wish I knew it without having the trouble of learning it." And so I make my children learn it in their infancy, because I wish I had learnt it in mine. A most illogical argument.

The difference in aptitude between seven years old without a motive and twelve years with a motive would probably result in favour of the latter. Moreover, there would be the saving of not having taught the language to a lot of children who, as we can now see, will never require it.

The Direct Method. In no subject has a greater revolution taken place of late years than in the teaching of language. This revolution has consisted simply in the abolition of Esoteric method of which we have spoken already. The old method consisted largely in doing strange things for hidden reasons, and somehow it was to come out right at the end, though the immediate benefit was not very visible. The devisers of the Direct Method considered merely what was wanted and how to reach it. "You wish to speak the language? Then it is no good learning Philology or Logical analysis; you will learn to speak, by speaking." The Esoteric school did, and does still claim the mysterious and awe-inspiring word "Psychology" as its support. If they were asked, "Why do you do

this ? ” “ Why is a child who ought to be learning carpentry doing unapplied geometry ? ” “ Why is a child who ought to be learning to speak French doing English Grammar of a logical kind which does not even help him to speak English ? ” Then they would reply, “ Psychology—a psychological reason.” Psychology was popular with the teacher because it served as an irrefutable argument for going diametrically contrary to the rules of common sense. The supporters of the Direct Method made an attack on the rear. They also went to Psychology, a new psychology.

By the indirect method boys were taught grammar and translation from the language into the mother-tongue and *vice versa*. The Indirect Method was obviously wrong. A language is the expression of ideas. We wish to speak like a Frenchman. A Frenchman expresses *ideas* in French. Therefore we shall not learn to speak like a Frenchman by expressing *English words* in French, still less French ideas in English words. We are introducing an unnecessary step, an “ Indirect ” route, between our ideas and the new language. To learn a new language we should not associate the new word with an old *word*, but with an *idea*. That was the argument.

Further, it was said that the natural way of learning a language is to learn it as the child learns his mother-tongue—by hearing it spoken in concrete situations, gathering the meaning and speaking oneself. There is no intermediate language in this process ; there is no translation ; there is no grammar. It is a direct association of word and thing.

Hence a new method was substituted for the old Indirect process. The rules of this new method are that only the new language shall be spoken, just as the child hears only the one language in learning his mother-tongue : that the teacher shall associate words with actual things, just as the baby does ; that there shall be only so much grammar as helps the child to speak the language. It is found that some is desirable.

Herein the method differs from the baby's process, for the baby uses no grammar at all in acquiring his mother-tongue.

Criticism of the Direct Method. If I speak quite frankly, I think practical schoolmasters will agree with me when I say that the Direct Method has not been quite the success which it ought to have been. The boys seem to be perhaps a little more fluent, and their pronunciation is better, but, on the whole, they do not seem to know as much French as under the old system. I keep on saying French because French has been the chief battleground, but it applies equally to English for an Indian or Hindustani for an Englishman. Moreover, the pupils are certainly not as accurate as in the past.

If the phrase "not knowing as much French" is analysed it comes to mean "they have not as large a vocabulary," and "knowing a lot of French" seems to mean "having a large vocabulary." If the reader will think over these phrases, I think he will agree with me that that is what he really intends. A man knows a lot of French who can talk fluently and easily about a lot of things, i.e. he knows a lot of words, for it is impossible to talk fluently about a bicycle if you do not know the words for tyre, hub, etc.

Why has the Direct Method boy not got a large vocabulary?

Partly, I think, because teachers do not always fully realise that a language is vocabulary and nothing but vocabulary. Vocabulary means phrases and skeleton sentence-forms, not merely single words. Pronunciation and grammar are simply ways of using your vocabulary. They are very secondary matters. The teacher's one and only and obvious aim is vocabulary, vocabulary, vocabulary. But teachers tend to spend a long time on pronunciation and practice in phonetics. The greater part of the first year is spent on this, and very often the children have got practically no real words or phrases to pronounce. And

in subsequent years there is a great deal of reading aloud, the main purpose of which is pronunciation. But the teachers do not always, in fact very seldom, take care that every new word, phrase or idiom met in the book is recorded and learned.

In fact, pronunciation has taken the place of the grammar idol. The obvious thing to do in learning a language which consists of words and phrases is to learn words and phrases, and their pronunciation with them. But with phonetics and pronunciation we are getting a slight veering back to Esotericism, an Esotericism which uses phonetic signs for its cabalistic diagrams and incantations.

But the real reason for the small vocabulary lies rather deeper. If the mother-tongue is not used at all, how does the child get the meaning of the new word? By being shown the object. Suppose now I produce a box of matches from my pocket and say, "Mai ki fai," which is, I believe, a Siamese word, are you certain for another occasion what "Maiki-fai" means? Does it mean box, or matches, or box of matches. If box, does it apply to any box, a trunk for example, or a tin box, or cardboard box? If matches, does it apply equally to wax matches, to safeties, and to strike-any-wheres? If not, to which? If box of matches, would it apply to a waistcoat box, a little tin box, a large threepenny box? And so on.

Consider the baby learning his mother-tongue; the first time he sees a book and hears the word, is he certain for another occasion precisely what book means? Would it apply to anything square, or must it be red? Will it apply to anything red, but not necessarily square? Is a newspaper, or a handbill, or a letter of many sheets, a book? He does not know. How does he learn? He learns by many experiences of books, seeing and using them. From this gradually he forms and limits his idea, or extends it.

The Direct Method imitates the method of the mother-tongue. Hence it uses the same process. The

teacher holds up one object, and if the meaning is not clear he holds up another different one of the same class.

What, then, of adjectives and abstracts ? The same process is used. In teaching the word "red" the master would hold up many different objects of that quality until the common element was grasped. So in teaching "beauty." And so we suppose in teaching "honesty," or "magnanimity," or "gentility," or "Infinity," or "potentiality."

How does a child acquire these ideas in his mother-tongue ? Gentility, for instance ? By hearing the word used in very, very many contexts lasting over very many years. One might say that even your and my idea of "gentility" is not quite complete. Even the connotation of the word Honesty must take several years : its acquirement is a most important epoch in the child's moral life. While the learning of simple ideas like match-box, book, red, spreads no doubt over several weeks.

What is the teacher of the Direct Method doing ? He is teaching the second language in the same way as the first was acquired. He is teaching a child of nine, ten, or fourteen, or even a grown man in one of the schools of languages, just as if he were a baby. Is there a reason why he should not do so ?

Yes, for the baby in learning his first language was learning also to think. When he went through the long process of delimiting the meaning of book he was getting his idea for the first time of what a book is. So, too, in learning the meaning of Honesty : he was forming his general ideas, and the learning of the word is only a secondary detail in that process. It is just putting the lid on a store of garnered ideas. Make your first acquaintance with the *complete* connotation of one of the following words : Umlaut, Correlation, Paranoia, Cantilever, Opsonic index, Darrein. Which is the larger part of the process, the garnering of the ideas or the acquirement of the word ?

No other conclusion remains but that the teacher of the Direct Method is teaching his pupils of nine, or ten, or fourteen, or forty, their general ideas all over again. He cannot do anything else, because he is forbidden to use the one magic vessel of mother-tongue in which that idea was originally sealed up.

Of course the pupils do not take as long to form the idea as they did on the first occasion. Usually they manage to short-cut: "Oh, I know what he means; he means Beauty!" I have often heard children whisper that remark: "Oh, it's 'Face,'" "Oh, it's matches," etc. Time is wasted: why cannot the teacher say what it is at first? Why this guessing competition?

Unless we will consent to use that magic vessel, the word of mother-tongue containing the store of ideas which took months, perhaps years, to collect, there is no alternative but to go through the whole process again. If the children guess (as they always do), it will take from five minutes up to a week. If they did not it might take years, it might take half a lifetime. Surely this is rather a farce, because the children always think in the mother-tongue, even if we do not *use it*.

Is it a violation of the Direct Method to use the mother-tongue? Most certainly no, so long as the ultimate connection formed is between foreign word and idea. But the only means of obtaining the idea is through the mother-tongue. Therefore let the mother-tongue be used only for purposes of explanation. After that let the foreign words be practised in conversation. The single introduction of the native word does not suffice to form an indirect connection. It merely calls up the ready-formed idea, and a new label is attached to it, to the *Idea*.

This is not the place to go into details of the method of teaching. Only this is to be observed, that once the vernacular explanation is admitted the teacher obtains an immense increase of freedom. He is able

to teach what word he likes instead of being confined to what he feels competent to explain without using the mother-tongue. No time is spent on deductions or guessing. The children can be given new words as fast as they can learn them. The vocabularies increase visibly. The lessons are more interesting because the teacher has no restriction as to subject : he can tell stories ; he can evolve plays.

The Dead Language. The abolition of the teaching of the dead languages is a common battle-cry of the educational reformer. We should be the last to agree with such. Undoubtedly it is as valuable to look back as to look forward. But such study cannot be considered a complete preparation for life. If we leave out any "faculty" ideas of the classics, such as unfortunately still persist, we shall appreciate their value better, and at the same time see more clearly their place. The classics have an inherent value as art : they have an interpretation value as explaining and showing the origin of the present.

Our object in reading the classics is then, first, to appreciate their artistic qualities as literature, and, second, to obtain their ideas for interpretation of the present. If we desired merely the facts and ideas of the classics, a translation would serve. But in that we recognise in them much of the world's noblest literature, actual acquaintance with the language is essential.

But the language is a "Dead" language. By a dead language we mean a language which is no longer spoken. It is a language from which we gain ideas, but we do not express ideas by it. It is not a living medium of thought. If there were no Frenchmen on the face of the world, we should still read their books, but we should not speak nor write their language. We read ancient Egyptian, but we do not endeavour to speak or write it. A dead language is, then, a language only for reading.

To learn to speak a language and to learn to read

it are totally different matters. In learning to read a language we know the word only sufficiently well to recognise it and associate with it its meaning. In learning to speak a language the speaking of the word must be acquired as an act of skill. This is a very much more difficult task. The reader may appreciate the difference by taking up an Old English or Icelandic poem, or a passage written in any language with which he happens to be unacquainted. With the help of a dictionary, he will be able to read very fluently in a few weeks. If he be asked, "What does *HRIME BEHROREN* mean?" he will be able to answer if he see the print, probably not if he hear the word only, for he has made an association only between sight and meaning, but not sound and meaning. If he be asked, "What is the Old English for 'Covered with frost'?" he will certainly be unable to reproduce the words, for he has learned to recognise, but not to perform the act of speech. It is one thing to recognise a piece of music, it is another to be able to sing or play to it. The second is by far the harder task.

Is there any real advantage in being able to speak or write the Dead language? Certainly the singing of a song adds to a certain extent to one's appreciation. So, too, to be able to speak or write a language adds to one's understanding of its finer points of style.

But is it worth it? Is it worth while for a child to spend four, or eight, or ten, or even fifteen years in learning to write a dead language when in that time he would have acquired two or three living tongues, and been able to read all the writings in the ancient tongue. The more usual story is that the boy starts to learn the grammar and composition of Latin, and continues for four years. At the end of that time he composes in Latin badly, and has not had time to read any of the Literature for which he really learned the language. If the child be merely taught to read and understand in those four years he could have read most of the best things in the Literature. If

his aptitude and his taste are great surely he may learn to compose in Latin at a later date. This is for the rare specialist. It is no task for the average child.

But to learn composition at the beginning is surely absurd. We should be the last to support abolition of the Classics. There is a grave danger that this may come about if the present method of teaching continues. Not ten per cent. of the boys who study Latin ever read a Latin author with pleasure or appreciation. Not five per cent. ever take up a Latin book after leaving school. The Classics are a liberal subject, and our aim is to form a taste. This aim is not being achieved.

Even with the living languages much may be said for far more simple rapid reading of foreign works. The appreciation of the works of a people leads to a desire to learn their tongue as a living instrument. If the French class be started by simple reading of good French stories, at a later date it will be possible to pick out those who have the interest and the aptitude to continue. For there is no value whatsoever in a half-known language ; it is the most useless thing in the world, while a real knowledge of a language is the most valuable gift not only intellectually but for character. It is another self.

CHAPTER XVII.

THE SELF

WE have seen how the child comes to know the world, and to respond to it: we have seen what tendencies he has to particular modes of response. We have now to look at the question, "How does the child come to know himself?" and "How may that self be developed into a good strong self?"

The Meaning of Self-Knowledge. The mere fact that I say "I" involves a recognition of a something which I call "Myself," as opposed to the world in which I live, and as opposed to Yourselves.

I may go further than this and say who and of what sort I am. *Physically* "I" am of so many stone weight, of so much strength, etc. *Mentally* "I" am of such a degree of ability, and that ability of such kinds. *Socially* "I" am of a certain profession, of a certain class, of a certain family. *Ethically* "I" am of certain virtues and certain vices, and of a certain attitude towards each, perhaps angry at the vices and not satisfied with the virtues. This is what I say about my Self.

What is the value of this knowledge of my Self?

An animal is more or less without self-knowledge. He does not say, "I do this." He merely does things—without any sense of "I." If a thing is done unconsciously in sleep or in madness, we will not admit that the Self did it; we will not take responsibility for it. We think that no punishment should be given

in such a case, because it is as if someone else did it. All direct reflexes, where a stimulus comes in and passes out immediately into an inevitable action, are unconscious. A Wink is unconscious, and a Sneeze, and still more the beating of my heart. I say not, "I beat my heart," but "my heart beats." An animal's actions are all unconscious in the same way. There is no "I" in them.

The race of animals improves by natural selection. The tribe of monkeys does not deliberately improve its physique by doing a planned course of physical exercises in the forest, nor does it set out to improve its mental powers by calculations. Simply, if a monkey is not strong enough he dies, and the stronger ones live. If he is not clever enough he dies, and the clever ones live. It is a process of mere chance; and there is a continual waste of rather weak or rather stupid monkeys who might with a little trouble have been made better by education, or at any rate a use found for them by a discriminating schoolmaster.

Man realises what he is; and he realises what in view of his environment he ought to be. For example, he realises that he has a race to run, and that he must make himself strong. He realises that he will have classes to teach, and that he must learn how to do it. By natural selection good teaching would be obtained merely because the bad teachers would die off for lack of food, or their classes would kill them. Just because the teacher and the athlete say "I," they set out deliberately to mend themselves instead of getting thrown away.

Thus animals blindly become better or worse by throwing away the bad and "getting a new one." But man voluntarily becomes better by mending the bad;—and more than that by mending the good, so that the whole race is made better. This is done by education. Education arises from man's realisation of his Self and dissatisfaction with it.

The Practical Bearing. If human development arises from self-consciousness, clearly it is the duty of the school (the instrument of development) to aim above all at that self-consciousness which is the basis of improvement. It follows that the aim of the school must be not to develop the child but to cause him to develop. It will do this by helping the child to realise what he is, and what he wants to be. It will then give him every opportunity for making the one into the other, for reaching the Ideal Self of his development. Whereas any system of education which aims at developing the child instead of teaching him to develop himself is obviously short-sighted. It takes no advantage of the boy's help: it may be actually, and very often is actually working against him. It may give four years' or ten years' development, but it will give no impetus or instruction in self-development, so that the boy will go on developing afterwards. When education stops, development will stop. No education can attempt to do all the development the child needs: hence in a vain endeavour to account for the child's whole life-development education becomes longer and longer, until it is actually holding the child back from self-realisation.

Only the boy can know himself, and only from what the boy is (which he alone can know) can be deduced what he ought to be. If an education tries to develop instead of encouraging self-development, it will educate the child up to a standard formula which will stunt as many powers as it encourages.

The Genesis of Self-Consciousness. The development of self-consciousness may be divided into three chief stages:

(1) *The Projective Stage.* Here the child is conscious of external objects and adapts himself to them, but without any turning back of thought upon the adapter so as to realise himself.

(2) *The Subjective Stage.* The child realises that one object in his world is very different from the others.

If he touches an ordinary thing he just feels the touch on his finger. But if he touches the one different thing—namely, his body—he not only feels the touch, but he feels also being touched. Moreover, he finds that this body obeys his thought and adapts, whereas other things do not obey; they have to be adapted to. Hence he realises his body as a separate thing from the world.

That body is sending in a continuous unbroken chain of messages to the brain of its general state of affairs. This constitutes a *coenaesthesia* or feeling of the body. This coenaesthesia gives a feeling of Selfness, of self-contained-ness, and a sense of personal continuity from hour to hour.

Moreover, the continual flow of mental life gives him a unity. After unconsciousness present memories are linked on to previous memories. There is a complete consistent succession. That makes up Self.

The main factors in the above process are—

- (1) The meeting and studying of other people whereby the child's own personality is formed.
- (2) Self-expression, whereby the personality is tested and consolidated.

(1) Meeting other People. For the first the school society is valuable. But it is narrow, and the very frequency with which a boy meets his schoolfellows makes him less apt to observe them. For this reason meetings with other schools are highly desirable. It gives the boy a new view of things, and enables him to look back on his own school from a more critical, external standpoint.

Moreover, between boys of different schools there are numerous little differences of detail, but the bases of character are the same. The meeting with boys of other schools enables a child to discriminate what is detail and what is reality. Certainly the moving of boys from school to school is highly undesirable; but one thing is noticeable, that the boy of many

schools has much more of an individual judgment and a power of critical appreciation of his fellows than the boy of but one school. It is not a bad thing to move a boy once in his early school career, and once even in the secondary stage. It gives him a new outlook. It is like travel: it enables one to look back. But much can be done without this risky process, by more social intercourse between schools. The mere meeting on the football field is nothing. It is the school social gathering that has most effect.

Meeting with the outside world is also of very great value. Boarding schools are particularly open to the danger of becoming monasteries. The boys' ignorance of vices and follies, the shock with which they sometimes come to him at the last, is due to a previous wilful blinding of his eyes. It is the school's duty to initiate boys into the world, but very often it does the opposite; it keeps the world from them. A school-master should teach boys the life of the town: he should teach them his attitude to it: that is what they want to learn—they want to learn how to look at things.

The society of women must not be omitted. The boy realises his own sex and its responsibilities only by meeting the other sex. Only by meeting women can he learn what becomes a man. This is difficult for the boarding-school, and one cannot but doubt the mixed school. The most ideal arrangement is the girls' school and boys' school (both day-schools) close together though in different enclosures, so that in many cases the brother goes to one school and the sister to the other.

(2) **Self-Expression.** On the second point, Expression, little need be said. The boy who is literary writes, and the boy who is artistic draws. It is the duty of the master in each class to draw especial attention to the human model. There is no harm, but the highest good in making senior boys write character studies of people of the district. The teacher

need give no personal opinion ; he only stipulates that the opinions shall be not wantonly unkind.

But expression does not consist merely in writing, or in drawing, or in drama. The truest expression is the unconscious expression of the real self, the child's own self, involved in response to an active problem. Not thinking, but doing and making, with freedom of choice both as to subject and procedure, are the training ground of character.

(3) **The Ejective Stage.** Having realised himself, the child begins to interpret external objects in terms of himself. Thus young children will endow a doll, or a stick, or a flower with a personality, and speak of it as "he" or "she." He endows these objects with his own personality.

But supposing the doll is an ugly doll, he endows it with a modification of his own personality, with a personality abstracted and readjusted from himself.

Similarly in considering other people, he knows them to be different from himself, and he endows them with personalities which are reconstitutions of his own. In other words, he builds up the selves of others from the rearranged elements of his own Self. By this he obtains a widening of his own personality.

Having realised the personalities of others he is able to enter into them, and consider himself from their point of view. By comparing this external view of himself with his own view of other people's selves, he is able to appraise his own value comparatively, and become dissatisfied. He gains self-knowledge.

Plurality of Self. The phrases, "Perforce I must," "I feel it my duty to," imply a duality of self. There is one self which does not want to, and another self which does want to. For example, "I was compelled to give some money to the man." Here there is a business self which does not want to give, and a sympathetic self which wants to give ; and I say, "My Business self (in which self I am speaking now) was compelled by my social self to give money to the man."

These Selves are groups of habits and memories. In response to a certain stimulus we adopt a certain attitude, and this particular complex of habits occupies the forefront of consciousness to the exclusion of everything else. Thus when I am speaking to men I am in one Self, and when I am speaking to women I am in another Self, another group of habits and memories.

It would never occur to my friend X. to say a bad word before women ; it would never occur to him not to say it before men. So, too, both in oneself and in watching others, one notices a complete alteration of manner of speech, of expression, of bodily pose, in conversation with a woman, with a child, with a business man ; it is just as if the man had been hypnotised and told he was someone else.

During the day we pass from one purposive attitude and group of habits to another, from one self to another continuously. There is a business self, a husband self, a father self, a religious self, a citizen self, all totally different according to the different circumstances which each meets.

Some circumstances are quite definite. A bill calls forth the business self without one moment's hesitation. But sometimes the circumstances are doubtful. We do not know which self to use. The business self would educate the son at minimum expense ; the parental self would be lavish in spite of consequences. The civic self would volunteer to defend the country ; the husband self would not leave the wife and child. In such moments one feels the stress of internal conflict : in such moments one says, "Perforce I must."

What determines the issue ? The comparative strength of the selves. The parental self is stronger than the business self. On the other hand, the union of the Religious and the Civic self may be stronger than the Parental.

What determines the comparative strength of the selves ? Ultimately instinct. Instinct caused the

original direction of energy towards parenthood. Round that original issue is built up a complex of habits, emotions, and memories. The past experience of our lives, our own decisions and the influence of the world on us decide how large the ultimate complex shall be. Every time we act through the parental self that self becomes stronger: we are more apt to act through it again in spite of the opposition of other complexes.

No doubt the resultant comparative strength of the various selves is a main factor, as said above, in the decision. But some people need more explanation than this, and they believe in a single underlying Self of Selves, a soul which regulates the balance and even overrules a majority.

The Two Fundamental Selves. Or we might call this, "The two poles of Self," the two directions of thought, outward or inward, the Egoistic or the Altruistic.

The original self of the baby is egoistic. It is a business self, a grabbing, snatching self, behaving as if it existed alone in the world and everything else was its enemy. But a baby very soon finds that he cannot exist without other people's co-operation. He finds that he is being helped every moment of the day. He takes pleasure in it, and drops things for nurse to pick up. He finds more than this: he finds that with the aid of his own co-operation those other people are able to help him better. If he puts his limbs in convenient positions he is undressed more quickly and more comfortably. The more complex his needs the greater the co-operation demanded from him. He finds later on when his powers are greater and he is able to do things for himself, that unless he gives positive help to other people they will not help him. And so a social self grows up which co-operates with and helps other people.

The Social Self and Co-operative Evolution. Natural selection involves only the egoistic self. Two

creatures fight for the apple tree, and the stronger one wins, and so the race improves.

Co-operative evolution is deliberate improvement of the race by the race itself. One man teaches another ; a place is found for the work of everyone ; one man helps another. One man goes up the apple tree and shakes while the other gathers. This is more economical than the fighting way, for more apples are obtained and no energy is wasted on fighting.

A factory is a co-operative unit ; each person does his work in the certainty that others are doing their work for the same end and fitting in their work with his. So in the State, instead of the clashing of individuals we have a partition of labour, all working for the good of all. When two States are fighting they are like the two individuals and the apple tree. They are wasting energy on fighting which might be used in getting apples. More than this, they are pulling branches off the tree to hit each other with. Local patriotism to Wales as against England, or to England as against somewhere else is a mixture of Egoism and Altruism. It is altruism in that the patriot is serving his country : it is egoism in that he is working for his own country against some other country. Egoism is always wasteful.

Every social organisation is built up on the assumption that a man possesses a self different to that which he uses in escaping at anyone's cost from a burning theatre. Religion and the State depend on that assumption, and they lay down a code of laws prescribing acts of altruism and forbidding acts of egoism. The individual must comply with the Duties these laws prescribe if he is to enjoy the Rights of membership of the community (viz. the altruism of others). Every vice is an egoism. Suicide is a vice because I deprive the community of my work for purely personal reasons of discomfort. From one's own point of view none of the vices or sins are wrong : there is no reason why I should not take the superfluous food

of a rich man without asking, or kill a dangerous and unpleasant person on my own responsibility. If one is to understand the reason of these ethical laws it is necessary to consider the matter from the altruistic point of view, not from the point of view of the man injured, but from the point of view of the society of which both you and he are members. Think of it as if you were in a little society of six living on an island, each having his special piece of work. It would be a dangerous principle for one of the six to kill another without consulting the rest.

Religion and the Social Self. Man's altruism was not a deliberately thought-out matter. It was an unconscious discovery. At first very few only, the wisest of each generation, understood why it is that one must not kill or steal. The rest were incapable of understanding. But it was very important that they should co-operate. Yet they felt altruism to be absurd; it seems ridiculous not to take food when you see it, still more so actually to give food to other people. So there arose the belief in a future feast after death which should recompense each for his present self-denial. This is like the sweets which are given to the child from "doing good," a bribe to an egoist who cannot really understand, so as to make him act altruistically (from selfish motives). This, of course, is a very low and primitive form of religion.

Real religion is the exact opposite. It arises from a sense of the incompleteness of the personal egoistic self. A man can have no greater punishment than to be alone. It is when we feel that society has deserted us that the religious sense is strongest, for we feel what we lack. Or again, when the social bond is strongest and many are gathered together in good-will, then religion is also felt, for we feel what we have.

We feel then the larger complement of the self, larger than the mere society of our fellow-beings. Mere co-operation to provide for carnal needs seems insufficient to explain the vastness of our individual

insufficiency and the intenseness of the social bond. There is something transcendental about our relation with our fellow-men, a something which contains that relationship, of which that relationship is but a symptom,—an essential unity of life, a higher unified life which vaguely yet intuitively we know.

In justice to the child's parents and himself the school is forbidden to give any one view of religion. No religion is a perfect truth. If two people hold different opinions both more or less wrong, we are not justified in teaching their children either. They may teach what they please themselves.

If we bring up children to act not for themselves but for others, as units in the organisation of mankind, we shall do violence to no man's faith, but we shall fulfil the spirit of them all.

The Means of Moral Training. There are three chief means :

Discipline,
Instruction,
Imitation.

Discipline. In the earlier stages when the child is unable to understand partly because he lacks the intelligence, but more because he lacks the altruistic instincts, we use Discipline. In the second stage, when he possesses the power to understand, instruction is given. Imitation is used all along.

On the master's side discipline depends on the power to command, and if command fails, the power to enforce command. On the child's side it depends on susceptibility to suggestion and influence, and on the fear of punishment. The teacher where possible uses the mere command and relies on his prestige and influence to enforce it. When this fails he uses punishment.

The power of suggestion is the power of putting ideas into other people's minds so that they accept them and act on them. This is the power of a hypnotist in making a subject go off to sleep. The efficacy of the suggestion depends on the per-

sonality of the suggester. This power of command, or commanding personality, depends on self-confidence. Self-confidence is sometimes used to mean Boasting or noisy assurance. This is really absence of self-confidence ; a man who is really certain of himself is not noisy, nor does he need to advertise himself. Self-confidence nearly always goes with a quiet manner ; few words and consistent actions. It arises from genuine competence, not merely in having found oneself able in the past to control, but in general competence, powers of action. It depends also very largely on the state of the body. Fitness and muscular strength have a great deal to do with it : a man can neither be competent nor confident if he is a weakling, or if he is not well.

Punishment to be of value must be inevitable ; whenever a command is broken, punishment follows. It is not in the power of a schoolmaster to forgive or mitigate. If he does so he is going beyond his rights. The law is above the judge. All he can do is to give a suitable punishment according to the fault.

The aim of discipline is to create social habits as a basis for the future social will.

Instruction. Instruction consists in an explanation of the structure of society, of the boy's duties and rights with regard to it. The boy belongs to eight chief social groups : the Family, the School, the Town or Village, the Province (or County), the Country, the Empire, the Race, Mankind. He must learn his duties and rights with regard to each of these. The teaching may perhaps take the form of reversed history, viz. history which starts in the present and traces backward the evolution of present institutions. It starts with the school :

How was this school formed ? How did schools in general come about ? My duties, my rights as a member.

How is this city organised and how did it arise ? My duties, my rights.

How is this county governed, and what is the origin of that Government? My duties, my rights.

How is the country governed, and how did that Government arise? My duties, my rights.

How is the Empire governed, how did it arise, what is its future? My duties, my rights.

Of what race am I? What is the organisation of that race, and the interrelations of the various Powers of that race? My duties, my rights.

How did mankind arise? What have been the chief landmarks of man's social development? My duties, my rights.

Perhaps on a separate course or as a part of the last section the question may be answered: "How did I receive the right of birth, and what duties do I owe for it?"

These are not theoretic questions: they bear directly on the child's action. They answer the question, "Where am I? Therefore what must I do?" They bear partly upon future action, but as far as possible on present action. The more the child can take a part in various societies, perform real social duties and receive corresponding social rights, the more genuine and practical is his training.

Imitation. There are two main kinds of imitation in the child's life:

(1) Unconscious imitation,

(2) Conscious imitation.

Conscious imitation in morality does not appear usually until after adolescence. It may then be imitation of a character in a book, an imaginary character in the child's mind, imitation of a fellow schoolboy, or of an adult.

Unconscious imitation has effect all through the child's life, especially in the early stages. These are very important because the unconscious imitation of the early stages is apt to influence the formation or selection of the ideal in the later stages.

Teachers are sometimes consciously imitated by children. But this is more frequent with girls than with boys. They are always unconsciously imitated, and this is really more important than the conscious imitation. For the conscious imitation can only be a modification of what has already been firmly fixed by unconscious imitation.

Imitation is the chief means whereby character is determined. Discipline deals only with the externalities of conduct. Instruction may produce moral thought, but by imitation the child learns how to act up to his ideals—or not act up to them. The main influence in imitation is the teacher—especially the strong disciplinarian. But theatrical virtues are of no use. The children imitate not what the teacher would seem to be but what he is, his real self.

It is impossible to say how much we ourselves have taken from our school teachers. The most fundamental things in our natures, good and bad, have been derived from them. We have had propensities; they have shown them fulfilled, and how to fulfil them. Some teachers developed our good propensities: others developed our bad propensities. The characters of the one or two influential teachers in each school, the teachers who were imitated, have had more influence in shaping the present race than anything else—even heredity.

Literature, art, ideals, even our own efforts during all the rest of our lives have been nothing compared with their influence. It is a greater influence even than the parents, for during the early period of habit formation and the adolescent period of character formation the boy is often three-quarters of his time at school. In a single year as a Teacher one can see one's influence spread through a school, and it is a strange self-revelation to see the reflection of oneself. It is a reflection which time will not blot out but intensify.

For this reason schoolmasters may look upon their

profession as the greatest in the world, for they build not ships, nor machines, nor books, nor statues, but the future itself which will make these. Neither the soldiers nor the statesmen of this generation will be remembered by the next, but the schoolmasters, for the generation is with them now. They only hear through them of the others.

We must have high opinions of ourselves in undertaking so grave a responsibility as to bring up the future race on behalf of the present. We must be representatives of all that is best in mankind of the present, for we let the life of the future flow between our fingers. If we are corrupt, how can the future be pure ?

There is heredity, but heredity is a germ. Everything depends on how the child learns to develop it. Therefore if any man has entered this profession simply as a stop-gap, hoping to get more money for himself in some other work later on, as an egoist, not prepared to give up everything for the sake of the future, not desiring to be the very best he can be, nor believing himself to be better than other men so that those who come after may learn the best of the present, then he had better go out now from his class-room.

One may play at business or at journalism, or at soldiering, or at being a civil servant, and give up afterwards without blame. One may not play at being a doctor. Yet that is nothing, for the worst one can do is to kill one or two of us whose lives are already half spent. But one may not play at being a father: this is the vilest offence because it does violence to the future race. And to play at being a schoolmaster unworthily is no less but a greater offence, because the harm is wider and no less sure.

Yet only your conscience forbids you.

We of the present do not matter, and nothing should matter to us, except those who are coming to take our place.

PART V.

CHAPTER XVIII.

EDUCATION FOR ACTION.

THE nervous system is described as a sensori-motor system, but the sensory element is in a sense secondary. The system does not exist in order to feel, nor even in order to know: movements are not made for the sake of perception. Sensation is for the sake of movement: perception is the realisation of the need for a response.

The Place of Muscles in the Body. The muscles account for nearly one-half of the weight of the body: more than one-quarter of the energy of the body goes in muscular movements. The largest area of the cortex deals with muscular movements: the rest of the cerebrum consists of sensory areas linked to the area of muscular movements, and of association areas which join sensation and movement, and group movements into higher and higher complexes. In fact, Life is conduct, and conduct is movement. Nerves, Brain, and thought exist for this alone, to direct movement.

Ethics, Art, Science, all products of the human brain or Director of Action are answers to the one problem, "What shall I do?" Thought is a temporary suppression of the direct reaction, so that we may act better later on. Life-Efficiency and character depend not only on the nature of the orders given in the higher

levels, but on what the executive department, the muscles, can do.

Thus physical and mental health depend on the efficiency of the muscles.

Muscle and Adolescence. The most important change of the boy's life is very largely a development of muscular power. The proportion of muscle in the body increases very rapidly at adolescence. First, there is an increase in size and strength of the muscles. Later, an increase in skill and control. Hence in early adolescence an awkwardness and shyness; the motor disabilities of the adolescent combined with a sense of increasing but as yet non-expressible power produces the subjective and ego-centric attitude of the young adolescent. He dreams of what he cannot do, because he has a sense of power disproportionate to the outlet. The emotional tendencies of the adolescent are due to the obstruction of his motor tendencies. Adolescent hysteria is the explosion of a pent-up desire for concrete expression. In *Dementia Praecox* the adolescent places the "deep thought" interpretation upon his practical inefficiency.

Later, when expression comes to the adolescent, we find an excessive self-conceit and self-admiration. The boy feels the sense of power; he is able to express it but not fully. The scope for action given him in his more or less cloistered life is never sufficient to exhaust his energies or to give him a sense of insurmountable obstacles. Imperfect opportunity for expression causes an ignorant confidence, and the unspent surplus of energy goes in subjective, day-dreaming self-admiration.

When the adolescent goes out into the world he reaches again by slow stages the balance of mid-childhood, where opportunity and power are equal. A gradually decreasing rate of growth together with a gradually increasing field of opportunity produces somewhere in the decade round the age of thirty a restoration of the balance of childhood. There is full

expression ; hence the subjectivism vanishes : the man at this age has his eyes upon the world as a competent and thoughtful worker ; his thoughts are increasingly less abstracted from reality into the formation of superfluous imaginings : as the balance becomes more perfect thought becomes more and more directly intended for concrete realisation. Fuller expression gives a fuller sense of limitation. Humbleness is a deficit on the side of energy as opposed to opportunity. It is a characteristic of old age, as is conceit of youth. The same principle lies at the basis of both. In ideal circumstances neither are found, for both are forms of self-consciousness. Both are symptoms of something incomplete or ill-balanced.

The practical application for the schoolmaster is that conceit is not a fault of the boy, but of the teacher. We are getting old : we are beginning to believe in the virtues of repose—meekness, humbleness, respect, modesty : the conceit of youth is offensive. The conceit of youth arises from the fact that we are treating youth as if it had the deficit-balance of old age. The very removal of opportunity, the preaching of modesty makes the sense of the surplus-balance of the adolescent more acute. He wishes to show himself, and to do things : the more we preach modesty the more we drive him into subjectivism. All this arises from the fallacy that the schoolmaster's duty is to guide passive youth along a smooth way. Whereas the true duty is to throw the graded obstacles of life in his path, supplying the weapons for surmounting. Old age *knows* because it cannot do. We tend, therefore, "to give youth the knowledge of age"—to make youth a premature bankruptcy.

The Finer Muscles and Evolution. The development of the finer muscles of the hand and face, and unidexterity are the three great landmarks in the mental development of the race.

The upright position is causally connected with the higher development of the brain. Hence also arose

the need of a means of self-expression more perfect than gestures or cries.

The development of the finer muscles of the hand and face were a consequent of the upright position. The hand was set free from its duties as an organ of locomotion and life to specialise as an instrument of construction, defence, and offence.

At a later stage increased skill needs a high degree of specialisation. One hand must be specialised as holder, and the other as striker. The hand specialised as striker becomes capable of finer movements, construction, art, and writing.

These highly complex movements were built up by a long-circuiting of simple first and second level movements. Thus the process of writing is a third level complex of fidgety simple reflexes. This development produces :

1. Greater complexity and delicacy of movement.
2. Greater consciousness and thought for movement.

Ideal Construction. Education consists in the development of these two powers. A child is born an animal with a largely reflex system of movements : ✓ his acts are simple : he acts in a moment ; and he acts for the moment. In fact, his conduct is the mere rebound of the stimuli. As development proceeds, there is a longer and longer pause between stimulus and reaction : the action when it comes is adapted to a more and more distant aim involving a higher degree of prevision.

It is in this last power that the young child shows his most fundamental difference from the adult. He is unable to look forward, to see intermediate steps. In manufacturing a toy, as in his morals, he lives "from hand to mouth." He makes a wheel without drawing it out and without first finding out how to make it, and without considering what it is going to fit on to. It is not merely that he lacks the experience to insert between the problem and the reaction ; rather

it is an incapacity of his mind that he cannot pause to call up the ideas into an anticipatory construction even if he had them. Still less has he the foresight to set about acquiring them.

Herein lies the real fundamental weakness of the child. It is a weakness for which nature has provided. The child is endowed with an abnormal memory to remedy as rapidly as possible his deficiency of experience. He has still more an abnormal power of acquiring skill. Moreover, all his desires and tendencies flow in these directions. He wishes to do things, and he wishes to know how to do things. The power of anticipatory construction in the mind is the fundamental power of life. It is human intellect; it is the power which distinguishes man from the animal. This power is learned only by action.

But the tendency on the part of the child is to separate his thought and his action, to make day-dreams and to make mud-pies, not to combine these functions into the production of a highly efficient doll's house.

A purely intellectual education obviously supplies nothing towards the child's most fundamental need:

1. It goes against all his natural desires for action, and prevents the exercise of his greatest power of acquisition, the acquisition of skill.
2. It does not teach him to connect thought and action. Instead of teaching him to think so as to do, it teaches him not to do but to think.

As a palliative of this, manual work has been introduced on the principle that Thought *and* Work, Day-dreams and Mud-pies, equal Thought **FOR** Work, the design and construction of a thought-out and effective action. The error is too deep-seated to be solved by so simple a means, though it is a move in the right direction.

The Elimination of Motor Activity from Life. As the population increases, more and more call is made

upon the land for food. The greater the demand made upon the land the less proportionately it gives ; in other words, each man's labour counts for less. So, for example, a two-acre field may support four men ; but if forty men be put to work on it, it will not produce anything like ten times the amount, perhaps only five times, or less. As the population has increased from four to forty, it is clear that deficit has got to be made up. It is made up by increasing the work-value of the forty men. It is impossible to increase their physical strength so that they may be eighty times as strong as the four men. Therefore the increase must be brought about by some device. The device used is specialisation :

1. The four men supplied the power as well as the brains. By means of invention the increased population uses other power, that of wind, water, coal, etc., as a substitute for muscles. Man himself specialises as thinker.
2. As a thinker he still needs a certain amount of skill. The manual skill of working the machine, and the pure thought of designing it are again specialised between the skilled labourer and the theoretic engineer. The skilled labourer is again specialised so that each man has one minute task only to do.

Further, the manufacture is done in the district where the power is : but raw material is distributed through the world on a different system. Thus the raw material has to be brought to the factory. To meet this man has developed a system of moving by proxy, as he has invented a system of working by proxy. He has done away with the power of man's leg as a natural consequence of having abolished the strength of his arm.

This specialist system postulates a very high degree of co-operation. Before man's food supply ran so

short man lived a predatory life ; the strong man stole from the weak. This state of affairs could continue only so long as there was food supply for the plundering majority. But so soon as the plundered became a majority powerful enough they naturally instituted a new system to provide for themselves, a system which gives a chance to weakness.

Physical strength thus ceases to be the criterion of survival, and a society is founded which plays into the hands of the weak.

Physical strength being originally the qualification for food getting was also the qualification for sexual selection. In other words, the most fit for marriage were the most able to afford marriage.

The Results of this Tendency. The results of this tendency has been the elimination of physical skill and strength from life, and from education.

Elimination from education was not a necessity, it was a mistake.

Elimination from life will never be completely possible, because however much is done by machine, there will still be the machine to make and the machine to control. Secondly, manual skill can never be eliminated from art. Third, many things have been made by machine simply because there has not been the skilled labour to make it better by hand.

The elimination of skill from Industry has been a result of its elimination from education. The extreme specialisation practised in modern manufacture is not always an industrial necessity or demand. No industry would refuse the intelligent workman if it could get him. The system of highly specialised unintelligent workers with a theoretic foreman is the result of an imperfect educational system. The manufacturer receives a few workers who have either hereditary gifts or a proper training, and by specialising them as foremen distributes their intelligence among the unintelligent workers. He has to employ these because the schools do not produce enough men of practical

intelligence. To train all the employees as all-round intelligent workers would be an impossible task. He therefore tends to make his processes mechanical and unintelligent, and such mental power as is needed he splits up and distributes in minute portions by a system of excessive specialisation under the control of a few intelligent foremen.

Thus specialisation as at present practised is often a means of getting over the absence of intelligence. In other countries where education has been of a more practical nature, labour is less specialised and more mobile, because the workers are more widely intelligent in the one branch, and more widely equipped in many branches. Moreover, wages are more equal because intelligence and skill have been less divorced.

In brief, industry does not require the narrow specialist : it has made use of this system only because education, in doubt as to how to prepare many boys for various vocations, prepared them all for nothing. It has marked time and avoided the problem by means of a general education based on a psychology invented for the purpose.

The demand of industry and of life in general is a cumulative specialism, *i.e.* not the man all of whose energies run into doing one thing, but the man who can do everything and one thing better than all the rest. Such a man is formed by successive specialisations as the limits of his particular powers are discovered.

THE ARGUMENTS FOR MOTOR EDUCATION.

The Physiological Argument. It would be true to say that the development of the child depends almost entirely on the exercises of his muscles, not merely in increased strength but also in increased skill. The prescription for the greater number of children's diseases is an "outdoor life" or "plain food and plenty of exercise." Such prescriptions might be necessary

where economic stress makes a healthy life impossible. But in the school there is no economic stress. It is regrettable, therefore, that the child's health should be found better before he enters school, and that there should be in many cases an improvement in health after leaving school. It is undeniable that the average gutter-urchin leads an extremely healthy life so far as town life goes, and if allowed to continue so would grow up into a reasonably healthy hooligan. The physical development of an individual as measured by height, weight, strength of pull, and vital capacity, is largely if not entirely dependent on the period between infancy and manhood. The undoubted fact of national physical degeneration must equally undoubtedly be put down in a large measure to the schools. Before the Industrial Revolution and the introduction of popular education there may have been more disease and sickness, but as a race we were larger and stronger. The change is not due only to the factory life, but to the education introduced to palliate it, for this affects the race at its more sensitive age. It would be equally true to say that the material being equal, the physical development of criminal children in industrial schools is better than that of the normal child in the elementary schools. We are educating the child's body and mind: these are inseparable: the one is a function of the other. Statistics show that so far as the body is concerned we were better without schools. In a relation so intimate as that of body and mind, it is difficult to suppose that an instrument which has had so pernicious an effect on the one, can be of any real benefit to the other.

The Aspect of Abnormal Psychology. The physician's prescription for the mental troubles of children is even more uniformly "out of doors and exercise." It is remarked that mental disease is almost invariably associated with some form of motor incapacity. This is hardly surprising when the relation of body and mind are considered. European education which aims

at the development and strengthening of the mind produces a remarkably high percentage of nervous breakdown and insanity, and the cure for such cases consists in the stoppage of the education which, as one would naturally suppose, ought itself to be the very best cure. Surely it is preposterous to suppose that the treatment of the mind in normality and the treatment of the mind in disease are diametrically opposite. It would be easier to suppose that the education of the normal child is conducive to insanity, and that only in disease do we forget our theories and give an education which is of psychological value.

The weak point of the child is the link between mind and body. The two symptoms of this are on the one extreme absorption in athletics and physical play, and on the other day-dreaming. Insanity is a total or partial lesion. Education cuts out the share of the body (or segregates it), and puts a strain on that link which few children can bear. Insanity shows up only the extreme cases. But a First in the Oxford Schools who is a failure in practical after-life is as sure a symptom of the harm as the child in an asylum.

In countries where European education has been administered to peoples more plastic to educative forces than the English these effects are seen most clearly. The mental, physical, industrial, and social effects of a purely Liberal education in such countries are a prophecy of results which English and European hereditary stamina will not much longer be able to withstand.

The Argument of Physiological Psychology. Mental development is the development of the higher levels. The function of the higher levels is :

1. The co-ordination of movements into larger complexes.
2. The presentation of a wider range of choice of actions ; at the same time the provision of a longer pause between stimulus and response.

This wider range of choice and longer pause constitute the essentials of human thought. By their means each stimulus can be co-ordinated with past experience before the selection of a response is made.

It will be clear, therefore, that man's higher intellectual gifts are not a withdrawal of mind from action, but a higher development of the power of selection and organisation of action. It can be developed only by exercise in the selection and organisation of action, since it was developed for that purpose and by that means.

If we were criticising this higher process of brain action as though it were a machine, we should have no doubt as to where the weakness lies. The higher efficiency in the choice of action lies in the increase of the pause between stimulus and response, and in the spreading of the stimulus over large associatory areas. The weakness of the device lies in that the pause may be lengthened out into a complete rupture. We have already pointed out from another aspect the occurrence of this in the case of Insanity. The spreading of the stimulus over large association areas may result in its complete dissipation. The stimulus to action may evaporate in a cloud of deliberation instead of spreading into thought and condensing into ultimate action. The whole tendency of the purely class-room education, with the attachment of unintelligent manual work and of games, tends actually to cause this lesion which is the chief danger in the evolution of the intellectual powers of mankind. The education of the present generation is largely in the hands of persons who from the aspect of physiological psychology are mentally abnormal in this particular way, and the education given is an exemplification of this fact. A large percentage of schoolmasters—how large we should not like to hazard—are of the scholarly type, as opposed to the practical man of action, the soldier, the pioneer, the constructive business man, the prac-

tical manufacturer. The energies of the school-master have run into unapplied thought. In largely unintelligent physical self-expression he finds an antidote which in many ways makes the disease worse. The result of this blunder in man's self-designed evolution is showing itself in the social evils of industrial makeshifts to obtain competent labour, the political evils of a class of neurotic dreamers amongst the lower classes and amongst educated women whose minds are most liable to the danger of the lesion, in an increasing amount of insanity and hysterical agitations. We see a decreasing competence of the most educated classes in commercial enterprise and in public administration. Royal Commissions into the Public Services and the clamour for technical schools are twin symptoms of the same evil.

The Argument of Genetic Psychology. Any educational system, to be effective, must follow the development of the child's powers. Education must be the encouragement of a natural growth, otherwise it will most certainly result in a perversion. Genetic Psychology deals with the growth of the child's mind. This growth might be divided into three main stages—Infancy, "Stability," Adolescence.

In infancy the child is gaining control over his muscles. He performs purposeless play—kicking, scratching, thumping, shouting. The function of this play is the building up of the large motor complexes, such as movements of the legs and vocalisation as instruments ready at the advent of intelligence to be formed into the act of walking and of speech. This is purely a motor period.

The term "age of stability" was applied by Professor Stanley Hall to the period in the child's life intermediate between infancy and adolescence. At this stage the development of the child's body has reached a temporary perfection. The body is not finished, but it is perfect in a small way. It is not the body of a modern man, but, according to Stanley

Hall, it is the body of a pigmy, and as such remarkably efficient. It is unnecessary to accept unreservedly Professor Stanley Hall's interpretation of Culture Epoch Theory, but his observations are undoubtedly correct in showing that the young schoolboy's body is a remarkably efficiently proportioned instrument of action. At the same time in this age of stability, extending over the years of 8 to 12, there is an extremely accurate balance between energy and power of expression. The boy's physical capabilities are exactly sufficient to express fully his mental life. Hence intellectually this is an extremely practical age. The boy's mind is set upon the needs of action. It is the age during which motor skill is acquired; it is the *optimum tempus* for the acquirement of a craft or the beginning of a game. The boy's mind runs upon making and doing; he is at the best period of his life for learning to make and to do. But he is not a scientist, nor an author. His subjective life is practically nil except for the imagination of to-morrow's round.

At the beginning of puberty this balance is upset. The child's body undergoes a period of rapid and irregular growth. From being the squat thick-set boy of the lower standards he develops into the gawky adolescent. Simultaneously a new instinct is plunged into his world of desires and upsets the previous narrow outlook. There comes a new source of nervous energy, and simultaneously a removal of the powers of physical self-expression. The result is the subjectivism and emotional tendencies of the age of puberty. These tendencies show themselves in the Reading Craze which usually manifests itself here. The child turns to reading and sometimes composition to satisfy his desires. These desires are largely of an emotional character: consequently the expression takes the form of literature or art.

There is, later, a gradual restoration of the balance of nervous energy and real expression. The boy finds his powers again, and finds them miraculously increased.

He conquers new spheres, and he meets new problems. An extended field of opportunity owing to his entrance to the University or first real encounter with the outside world in his first "job" brings him face to face with the questions of morality. He finds the artificial standards of a cloistered school existence insufficient. He sets about correcting them. He sees a world teeming with social, political, and scientific problems round about him. He starts to apply his new found powers to ambitious schemes for solving them. Hence a second reading craze, but this time modern, scientific, sociological, and political. This is the period of constructive thought.

How far does the school course agree with this development? During the first period, infancy, an age of unintelligent learning to use the physical powers of *motor* development, the child is submitted to a kindergarten process of *sense*-training; he is made to observe. As a reward for his long-suffering passivity he is given rewards which take the form of highly artistic games devised for him by adult "experts." He is to "play" at what he has observed. One must not be unjustly scathing. Yet it must be confessed that the general impression derived from the kindergarten is that of imprisonment for purposes of observation over which in some rare instances is cast a thin veneer of "manual work," such as paper-cutting. When the natural fidgetiness of the baby crying for motor self-education which God has devised can no longer be restrained, then premeditated games are given which to the kindergarten class must bear the same relation to real play as the enforced inspection of an unintelligible picture gallery bears to a country ramble.

On the contrary, it would be unfair if proper appreciation were not given to some of the kindergarten work conducted by the natural instinct of women untrammelled by pedagogic directions. It is the salvation of infancy that women teachers have been able to make

of the kindergarten something much better than it is. But it is an unsatisfactory condition that the salvation of a school should lie in a breaking of the law. An accurate and faithful realisation of kindergarten methods results in the state described above—often worse. Fortunately the children, who have not yet had experience of school-discipline, can often make such complete fulfilment impossible.

From the age of seven to thirteen, the age of the acquirement of skill and of practical self-expression, the boy finds in the primary school a purely intellectual education. At the close of this, from fourteen to sixteen or eighteen, a period of reading, self-realisation, and abstracted thought, he undergoes a manual or technical education.

Thus, when the child should be acquiring the motor complexes, he is undergoing sense-training in the kindergarten.

When he is naturally disposed to be acquiring practical skill with abnormal aptitude, he is receiving a purely intellectual education in the class-rooms of the primary school.

When his powers of acquiring skill are at their lowest, and his tendencies lead him to a voracious excursion into literature, his literary teaching ceases and he begins his technical education.

When the world of science and politics first attract him, his school education ceases altogether.

To the best of my power in a subject on which one cannot but feel strongly, I am doing my best to be just and to avoid exaggeration. In the above paragraphs we see a solid and obvious fact, so obvious that without thinking how this came about it would strike one as amazing : from every aspect of psychology and physiology, education is most accurately upside down.

It has been the result of a cumulative botching. The Primary school education was found to have been a blunder. The results were unsatisfactory ; the

children did not seem capable of taking in the knowledge presented to them. Moreover, they were found (as might be expected) inefficient in the practical matters of after-life. Their motor inefficiency was set down as sensory bluntness. The child who had not been taught to look at the world and say "Where is there an object to which I can do something?" was set down as "unobservant." Children observe to act. The children had not been taught to act; they had no motive to observe, so their lack of observation was set down to inefficiency of the senses, and to be cured by sense-training.

No doubt the psychologist is an introspectionist, a subjective largely withdrawn from action. The natural outcome of the psychology of the psychologist is that the text-books are full of Memory, of Knowledge, of Sensation. The mind is considered from the scientific attitude as a receptacle, and its function as knowing. The failure of primary education was set down as a failure in knowing, and the senses were to be trained as a remedy for the absence of the objective attitude. Hence the Kindergarten and Object and Observation and Sense-training lessons of the lower standards.

A second protest on the part of the adult generation evoked the technical school. This naturally enough was added on at the end of the Primary course, just as the kindergarten was added at the beginning.

Extended Infancy. From the teaching everything just at the time when the child is least able to learn it arises the phenomenon of "Extended Infancy." This phrase describes the fact that each year the period of preparation for life becomes longer. Thus in the primitive tribe a child's preparation for life ceases at the age of puberty. But in the Middle Ages this was the age for going to the University. In the last generation the age for the University was nearer seventeen or eighteen. It is now tending to twenty.

At the same time, every profession is adding at the

end of this University course a period of special training. The teachers' training adds one year. The I.C.S. training adds three years. The Legal training adds about the same plus the period of devilling. The medical profession adds about four years. A completely qualified dentist has nearly six years in addition to his course.

In the schools of the working classes the same principle is seen at work. By the Elementary Education Act of 1876 the school leaving age was ten. By the Act of 1893 it was eleven. By Robson's Act of 1899 it became twelve. By the Act of 1900 it became thirteen or fourteen. The Free place system raises this in the majority of cases to sixteen or eighteen. The modern tendency is to extend the Free place system still further. Continuation and Technical schools raise it to twenty. Evening classes may even continue to twenty-five or thirty.

What is the reason of this? Education cannot propose to teach the child *all* that is necessary for life. It cannot turn out a fully equipped worker. Its aim is to set the child on the starting-line, to make him capable of a profession and progressing. It is found when the child leaves school that he is unfit for any profession and untrained in learning. He has only been *taught*, and he has been taught nothing that equips him for his life. *Ergo* he has not been educated enough. *Ergo* lengthen the period of schooling—without success. He is still less equipped than before, for the cause of the evil has been extended. Add a second school, and the child is still further kept from the possibility of acquiring an equipment. Finally, when the child has passed the stage for learning such things, and has had the edge taken off all that this period of life wants to learn, set up a technical college, and extend the period still further—without effect. The inefficacy of the technical college is not a fault of supply but of demand. The boy at this period is only too ready to wander off into the unpractical and the general,

for the right period for technical learning is long past. Hence the complaint of employers that the product of the technical school is unpractical. The teachers are, in many cases, practical workers, but the education is being given just at the wrong time.

The process of "Extending Infancy" arises from cowardice to face the problem of preparing the child for life. The question of preparing millions of children each for his work in life seems an impossibility, seems to require a prophet. The problem is deferred and deferred until the last moment. The last moment is a psychological absurdity, because it is by nature the most unpractical period of the mind's development; and, moreover, because a child who through the educationists' weakness has been educated generally and unpractically, cannot be specialised and made practical in the last moment at a period when character is already largely formed.

So it is no exaggeration to say that the whole thing is upside down and results in nothing. And education is added to education to make it right.

What is the result of this? If the period of education is extended, the period of workmanship is decreased. No time is saved, because the education does not bear on the work of life. Extend the period of education and the cost to the parent is increased. Moreover, the time during which he is gaining money to pay it has been decreased, for the parent himself has undergone an extended education. High taxes, high cost of children, short working period results in avoidance of parenthood by the best classes—those who provide best for their children. Only the least thoughtful classes can afford to breed. Hence decline of the birth-rate, especially in the more valuable grades. These classes have the most extended education, and therefore tend to be made most inefficient in life. At the same time they feel the cost of education most, because of the incidence of taxes for public education, and because they give their own children the longest

education. Thus we have an increasing education, an increasing cost, especially to the most conscientious classes, coupled with a decreasing efficiency and a decreasing period of work. Hence there is a continual sinking of the better grades, or dying out through inability to afford prolific breeding. The places are filled by the rising of men of exceptional ability from inferior classes. These give their children an extended education, and eventually the stock is eliminated as before.

Mankind's future depends on its increasing efficiency. This increasing efficiency is obtained by education, by giving the children of better stock a better chance in the preparation for life than the children of inferior stock. In this way exceptional ability is given the best chance of survival. Under the system of "Extended Infancy" the best stock is kept longest from life, and by the cost of this extension is discouraged most severely from breeding.

It would not be untrue to say that education looked at from this aspect is a parasite upon human progress. It is an imprisonment of the best progeny, and a breeding-tax upon their progenitors.

Moreover, the human race is being kept dangerously and uselessly misemployed during nearly one-quarter of its time. More than one year in four of the present history of mankind is being wasted, and the other three years have to hustle in order to pay for it.

The Eugenic Aspect. There are two bases of selection for marriage. First, physical attraction; and, second, ability to earn a livelihood. The second qualifies the first. The man physically fit, if able to earn a livelihood, is selected. But those not able to earn a livelihood ample for a wife tend not to be selected, even though physically fit.

These two bases of selection are meant by nature to be coincident. In the primitive society where motor ability is the criterion of earning power they are coincident. Until a comparatively recent stage

in human society they have been so. Their separation may be traced from the date of education, and in particular from the date of public education and the Industrial Revolution. The less fitted for life the child is, the less he is of an intelligent worker, the more the higher posts in industry will have to specialise in intelligence and the lower in unintelligent mechanical skill. Thus doing and thinking become separated, and thinking receives the higher wage.

In this way strength and skill cease to be the basis of marriage selection, since intellect without motor skill becomes coincident with ability to earn a better livelihood.

Intellect without motor ability breeds badly. Statistics of the most intellectual classes show a low birth-rate. This is very clear in the case of University Professors and teachers. In the case of women, whose reproductive powers are even more sensitive to adverse conditions, it is even more clear. Schoolmistresses, female lecturers, and students have an average little removed from barrenness. The opposite holds true of women employed in manual labour.

Present education is entirely intellectual. Those who fail are degraded to less or more skilled physical labour. This is ill-paid.

Thus under the present system ability to marry is coincident with the lowest reproductive power. The nation is recruited largely from the lower classes, the physical workers. This is made possible by a system of increasing State support of the children, in education, feeding, medical care, etc. This State support in the place of a natural social selection on the basis of economic ability to marry, encourages equally the incompetent and the imbecile, while discouraging the successful by laying the cost on them.

The Sociological Argument. Public education was introduced not in response to a clamour from the lower classes, but by the upper classes in response to a need felt by themselves for social regeneration. It

was a philanthropic and partly patriotic movement originating in the upper classes.

When an education is paid for by the receivers it will follow a law of demand ; it will respond to the desires of the parents ; it will embody a class ideal ; it will be practical and progressive. Where an education is philanthropic or compulsory it will follow the ideals not of the receivers but of the givers, namely, in this case, of the upper classes who gave.

In other words, the lower classes are being educated up to the standard of the Ideal Being of the governing class. Perhaps the ideals of the governing class are common to all men, differing only from those of the poorer class in that they are a nearer realisation of the ultimate truth. If this is so, the procedure has been correct. But the existence of a class usually implies a difference of ideals, not a difference in quality so that one is a better version of the other, but a difference in nature and direction. The class difference of ideal corresponds to a difference of social function. Each ideal and each function is of equal value, just as the ideals and functions of the headmaster and the class teacher are of equal value : the headmaster thinks of an ideal school ; the assistant thinks of an ideal child ; one organises ; the other is in actual touch with the material. Their posts cannot be interchanged, nor are they commensurable in values. We may find the ideals of the governing class universal ideals ; or we may find them class ideals, one aspect only of the universal, transferred into a different environment but not translated.

The Ideal of Primary Education. It must be remembered that the larger part of the present system of primary education took its rise at the time of the Industrial Revolution. The health of the nation was in chaos : the children of the nation were being exploited : the relation of employer and employee was in a condition of *Laissez faire*. And the old Tories, the Government of the landed gentry, still held their

own. The blame of the strikes and of the cholera epidemics was laid upon the working classes ; it was said to be due to their ignorance—instance the dearth of skilled and intelligent labour. Education was given by the upper classes as a panacea for unskilled labour, strikes, cholera, gin shops. The people would understand, and they would not do these things. If the education which was given had been the right education, no doubt the physical degeneration, the mis-employment of leisure time, the absence of skilled workers might have been mitigated. It was a Klondyke time in England : men were only too ready to learn skill and science. The Mechanics Institutes were a symptom of the eagerness of the worker for education. The self-realisation of this force was prevented by an application of education by the upper classes according to the law of supply.

The education was given by the Government of landed gentry. An education which had arisen in a philanthropic effort of that class was subsidised. This education was based on the only known education which had arisen in the Middle Ages as an education for the cleric or the Governor. The education given by the governing to the working classes was based on their own education. It reflected the ideals of their own, the governing, class.

We are always disposed to impose our ideals on other people. This is a psychological truism. It is a form of Positive Self-feeling, a fundamental tendency of mankind which produced equally the Mahomedan Invasions, the Crusades, and the Missionary movement. It is a method of extending ourselves.

The Ideal of the Education of the Upper Classes. The upper class is the governing class. Its education fits the children for governing. It consists in a knowledge of Latin, which was originally the language of Government, and is now retained largely for its literary value, partly for its historical value, partly by a mistaken psychological theory of its use as a mental discipline. It consists in French, which is the modern

language of Government and social intercourse, Modern History, English Literature, Mathematics, and a smattering of science added at a later date.

So far as teaching is concerned it is almost entirely a literary education. The governing classes are the guardians of national aesthetics, and hence literature tends (or tended up to the eighteenth century) to be a social passport.

This fact is due to two reasons: first, that the governing class is usually economically more able to spare the time for an almost professional cultivation of literature and art; secondly, there may be some truth in the Theory of Conspicuous Leisure as an explanation of why the arts of leisure should be cultivated so thoroughly, and why they should be considered a necessary qualification for the governing class.

Thus it comes about that the arts of leisure, in which the poorer classes could not afford to specialise, are maintained at a high standard by the governing class as an actual part of their professional equipment, and the aesthetic traditions of the race are thereby maintained.

Hence comes the literary curriculum of the Public School which is essential to the boy as a social qualification and as a training in the ideals of government.

The Teaching is only the least part of the curriculum. Life does not consist in learning but in doing. The essential quality of the Governor is the power of discipline. The Public School is really a place of social life in which the boy of the governing class is taught to be a disciplinarian. He is taught this by means of the athletic and complicated prefect system which are the real essence of the school. It is the active realisation of the literary and historical course.

The Application of this Ideal to Democratic Education. The curriculum of the Public School education as it was in the early nineteenth century was transferred bodily to the Primary schools, only with the difference that English was substituted for Latin,

English grammar for Latin grammar, English literature for Latin literature. The disciplinary training of athletics and the Prefect system was dropped *en route*. In fact, the Primary schools are giving to the working classes a training which can only make them politicians, so short that they are only embryo politicians, and without the training in practical active discipline and control, so that they are only loquacious agitators. It has made a nation of workers anxious to be skilled into a nation of incompetent talkers. It has filled the streets with the clamour of a democracy, not based upon individual proficiency, but arising from a mistaken universal education for governorship. True democracy is the consensus of many citizens competent in various works. This is the ideal to which history looks forward. But the schools are turning out undisciplined and fledgeless half-governors ready to manage their country in a thousand different ways, but incapable of doing the work which alone can make their country an economic reality.

The so-called "General Education" is a governor-class education. If a really general education were devised it would be of no use to anybody; it would prepare a man simultaneously to be a chauffeur, a doctor, and a member of the House of Commons. Classes are not distinctions of merit; the pay of the young foreman and the young doctor are equal: the income of the business man is as good or better than that of the Cabinet minister or Peer. Classes are distinctions of work, and above all distinctions of nature on which the work distinction is founded. All education so far has been class education. The Public schools answer a governor-class demand. The secondary schools *should* answer a middle-class demand. A school is the perpetuation of a class ideal and a class skill already partly hereditary.

The Public school is the only institution which has retained its true class purpose. Because that purpose has been mistaken, and because gentility has been

looked upon as a prize instead of a profession, it has contaminated all the rest. The ideal of the guild school seems to be lost—that education is only organised apprenticeship in certain skill, in morals, and leisure occupation.

Everyone is being educated to the same class, governors.

The Political Argument. If the class of skilled workers were left alone to provide their own education, each parent would educate his child if possible to follow his own trade, and to follow his own methods of employing his leisure. He would teach him to work and to play, to live and be happy in the same way as himself. If the worker pays someone else to give that education, the same education will be given, according to the law of demand. If the Trade Union gives the education it will follow the law of supply. The Trade Union desires an efficient worker and a faithful Union-man; it does not consider the individual's desires. If the education is given by the State, again the State will *supply* an education to produce what the State wants. The State wants an efficient industrial unit and an intelligent civic unit. It will teach him a trade for the sake of the industry of the country; it will teach him the elements of politics and economics so that he may vote intelligently for the sake of the wise government of the country.

The present curriculum of the schools is almost entirely Liberal, that is to say, it is made up of arts such as literature, drawing, unapplied science, unapplied nature study, etc., which are intended for the profitable and pleasurable use of leisure time.

Such profitable leisure arts are of the highest value to the child as an individual. They are the highest things of civilisation; they provide him with a subjective life.

But the education is provided by the State, and the State has nothing to do with the child's or the man's playtime. Any interference with it in after-

life, except in so far as it were used to the detriment of other citizens, would be most fiercely resented.

The State is not concerned to teach us how to amuse ourselves. Its only reason for teaching liberal subjects can be that a profitable employment of leisure time increases the value of the man's work as an industrial worker and as a citizen.

The place of these arts in the school must, then, obviously be secondary to the learning of technical efficiency and civic duties. Why, then, do they stand first ?

They are arts of pleasure. Most of them are of equal value. Some men have their ideals and their leisure in art, some in literature, some in music. Why, then, are they all compulsory ?

If these are leisure subjects, it is not the actual knowledge of literature that is needed, but the power and habit of studying literature in leisure time. Why, then, is literature placed in the ordinary curriculum and taught by class-room methods.

The child is being taught his leisure as his profession. And he is being taught subjects which are not even leisure, but the garbled preparation of one of the ruling class.

The reason of this we have already seen.

We have to inquire how the State may achieve its proper aim in education, producing a competent industrial unit, an intelligent and obedient citizen who is the better for a profitable employment of his leisure hours. We must set out to construct an ideal, the State's ideal aim, and an ideal means of achieving it.

CHAPTER XIX.

IDEAL CONSTRUCTION—THE BOY.

Psychology and the Aim of Education. Educational psychology is liable to one great danger. The danger is not inherent in itself; it is not any fault of the psychologist who gives: it is a fault of the schoolmaster's demands. The young schoolmaster is put into an already established school: perhaps it has been established for some centuries. He is put into an already established educational system of Syllabuses which repeat themselves with little variation year after year. The tradition of the school goes on, and the Syllabus goes on. The aim of both was foreseen years ago by some distant founder; it is not a concern of the schoolmaster. He has definite things prescribed for him to do. He turns to educational Psychology not to ask, "What shall I do: what is this child: into what must I help him to grow?" but he asks, "How? Assuming the aim, assuming certain work to be done, how shall I do it?"

Books of educational psychology may be written on the meaning of the whole strange business; on The Values of Life, on The Purpose of Education, on The Future of the Child. But the teacher throws them aside. He does not want "Talk": he wants plain, simple directions which will tell him how to keep a class in order, and how to plan a lesson which will please the theoretic corner of the Inspector's mind. In fact, he wants a book of magic which,

without training or experience, will make him into a teacher and a disciplinarian. He expects this of Psychology. Psychology and magic in the inexperienced mind are closely allied.

And this is not the duty of Psychology. We have said already, that it is a sheer impertinence for the psychologist to interfere, except with the vaguest generalisations and in the rarest instances with the technique of the schoolmaster's art. The technique of discipline and of teaching, like the technique of any other art, painting, or acting, or music, or anything else, is a matter of actual experience. It is learned from the practical man by observing practice and by practising. It cannot be learned or taught by any psychological or magical short-cut.

The limitations of the practical man lie elsewhere. His limitation is in the aim. He is technically capable of doing anything; but it needs one who is able to think freely and independently of the detail, who can consider the whole matter from a more distant point of view, to suggest precisely what should be the aim of this doing; at what the technique should be directed. The art critic cannot claim to dictate on the mixing of colours or the skill of visual self-expression; but he does dictate on the aims of art and on the psychological bases of its appeal to the feelings of the spectator; on its place and purpose in life. So, too, the psychologist is beyond his sphere in saying, "Thus and thus shalt thou speak; thus teach and in such an order." His duty is to outline the aim to which the schoolmaster should direct his skill: "Such and such, in view of general considerations, should be the general nature of your final product," and he leaves it to the Teacher, with full confidence in his skill, to translate the aim into reality.

Ideal-Construction. Ideal-construction is the mental counterpart of material construction. A carpenter is told to make a bookcase; the case must contain so many shelves of such proportions; it must have a

certain number of drawers and pigeon-holes. He has in his workshop certain materials which will be combined to make that bookshelf. He puts these materials together mentally to form the object which he has to make ; he constructs in his mind the Ideal or aim to which his work will be directed.

Education, in a sense, is a process of making. We start with one thing, and it becomes something else owing to our efforts. In order to give these efforts an aim and purpose we mentally construct out of the present data the future final product.

In another sense Education differs very widely from the process of making. In making we are shaping material objects. But in education we deal with life. Life makes itself. In forming an educational " Ideal-Construction " we must consider, in addition to the independent ideal in our own minds, the active potentiality contained in the material. It may be our ideal construction that the wood should become a book-case, but in the living wood lies the possibility of becoming a tree.

Only in so far as we consider the material of education as dead can we form independent ideals of the final product of the process. We should consider the material rather as a vital, self-willed, constructive, and self-constructive being like ourselves, and ourselves not as carpenters, but as gardeners, encouraging or checking a growth to suit circumstances imprevisible to the growing thing, but foreseen by us who have ourselves grown.

Just because our minds are inherently apt to make ideal-construction for dead matter, and in making any ideal-construction to consider the material as dead, just for that reason we tend to set up one independent unplastic idol as the ideal final result.

Because of the egoistic basis of construction—a form of self-expression or self-reproduction—that ideal tends to be a model of ourselves. Because it is an ideal, it is not a faithful model of ourselves, but a

model of what we would like to be. We would like to be the extreme antithesis of our deficiencies. Such is the idol, a complement of adult insufficiency.

Let us examine some of the outstanding aims of education in the light of the foregoing remarks ; perhaps by a process of selection the reader will be able to form an ideal-construction to set before his own efforts, as a teacher.

The Literary Ideal. The literary education sets before itself two main aims—a receptive and an expressive. On the receptive side it directs itself to the creation of (to use a hackneyed phrase) “The higher life,” viz. a life of aspirations and ideas beyond and above the ordinary domestic and professional thought required for the purposes of subsistence. On the expressive side it aims at the provision of an outlet for energies over and above those required for the common domestic needs of life, that outlet again leading to a higher life of the creation and artistic expression of ideals above the common professional thought.

Such expression postulates a self. It postulates a sum of instincts and of experience. It postulates the restrictions imposed by a single and narrow bread-earning profession which does not give full scope to these instincts. Hence the desire for an outlet in a higher, in a less restricted life, receptive on the one side of ideas which stimulate the unexpressed instincts, and on the other side expressive of the unexpressed instincts.

Thus the ideal of the literary Public School is that the boy should be something more than a mere utilitarian ; it aims at killing the Philistine, the despised “mere business man” ; it aims at the detached, cultured, and philosophic attitude of the University.

Is the child's life of the kind described above ? Has he need of this ideal ? Or is the ideal an adult ideal, a “complement of adult insufficiency” ?

The child is subject to no economic pressure ; nor has he yet narrowly specialised. The essence of his childhood lies in the fact that his powers and his desires (or instincts) are unsorted out, undifferentiated. The process of education aims in the early stages at giving expression to every instinct and power ; and increasing expression to the greater powers as they are discovered, thus gradually specialising. Only in the very latest stages of schooling can there be complaint of an unexpressed and prisoned residuum—when the child is at last preparing for a definite place in life.

This argument presupposes that the school is preparing the boy during the whole period with increasing definiteness for his wage-earning work in life. In such a case studies conducive to a Higher Life will make their appearance gradually as the specialisation becomes more narrow. But in supposing such a school we are not supposing the school which embodies the Literary ideal. The schools which actually embody the literary ideal do not prepare the child for a wage-earning work. Their curriculum is, as we know, purely literary. The whole curriculum aims at the creation of a higher life without containing any elements of work which these studies are higher than. The lower life is all presupposed : it is all to be found afterwards.

Nothing is more natural for an adult than to presuppose the lower life. We are all apt to presuppose our professions, to take them for granted. The grocer presupposes his grocery, and will have his son taught something better. The schoolmaster presupposes the drudgery of earning a livelihood, and will teach his pupils something better, the detached employment of his leisure time.

But if that something higher be taught as a something by itself it becomes meaningless. It loses its significance as being something detached and higher. It becomes itself a drudgery to be reached out *from*. In this way the wage-earning life becomes a hobby

for the literary, a relief from the Higher Life! The cultivation of this attitude towards the Technical duties of life is in itself a disaster—the notorious Oxford business man. Nor is the correlative less pernicious—that the boy is robbed of a higher life. The activities which constitute it have been deprived of their significance as leisure subjects, as voluntary, as detached, as “higher.” The effect of the contrast has been wantonly or blindly destroyed. Literature and art are work.

In fact, the ideal is a self-expression of an adult ideal set into the child’s life independently of difference of circumstances and of the natural requirements of the child.

The Religious Ideal. Every educational ideal is in a sense religious. The religion itself may be of the vaguest nature; it may lack a divinity, and a theology of any kind. But in that religion is an aid to life, a looking forward and an endeavour towards something better than we are, in that sense any ideal constitutes a religion.

Taking this into consideration, it will be clear that ideals and religious ideals also (meaning ideals with a definite divine sanction) may be extremely various. Their variety depends on the variety of mankind. Religions are not made wholly in heaven and set down already perfected on earth. They arise in response to definite human needs. They give an expression to something which a section of mankind desired to hear expressed but could not express for itself: and they give a sanction to that expression. For if a religion replied to no human necessity it would be without followers; just in so far as it embodies a human need the religion exists.

Every lasting religion, then, is an embodiment of a permanent human desire. Religions are various because those desires are various. The desires are various because mankind is various. Mankind varies in three main ways: in race, in age, in temperament.

The last is the most essential. It depends on the other two. There is the aggressive temperament, the masculine, the temperament of success, the temperament of youth. There is the regressive temperament of rebuff, of age, the feminine. These form the great dividing line between religions.

It would be too long to examine each religious ideal; for the modern educational effect of many is very small. It would be an interesting study to trace the influence of Hinduism in purely Indian schools as an educational ideal; no less of Mahomedanism. Unfortunately, the number of schools really modern, yet free from Western influence where such effects might be traced, must be very few.

Amongst English-speaking schools, broad church Christianity has undoubtedly the widest influence. The ideal may be taken as an instance.

The Broad Church Ideal. The ideal is one aspect, an interpretation of the general Christian ideal. It emphasises the Negative Attitude not only towards God but also towards the world. Man is in dependency on God, a humble and a loving servant. He aims at a relation of love with his fellow-men, of non-aggressiveness and forgiveness towards his enemies.

The main features of the ideal are

Dependencetowards....the Divine,
Love.....	towards....fellow-men,
Non-resistance.....	towards....enemies.

This is certainly not the whole of Christianity. It is a selection and an emphasis of certain aspects. We hear nothing of "He that is not with me is against me," of the Barren Fig tree, of the sorcerer smitten with blindness. And yet this fiercer aspect of Christianity occupies a prominent place in the New Testament; it occupied a prominent place in the Christianity of the Middle Ages. It led to much brutality, but it gave also much virility. But the Broad Church finds little place for it in its teaching.

Again, there is much of the loving God, but little of the justice of God. Hell holds a very small place in the Broad Church compared with its prominence in the earlier history of Christianity. Again we see in the New Testament two distinct and equally prominent aspects of the Holy Spirit: he is Inspirer, as in the case of the early missions of the Apostles; and he is Comforter. If anything the latter is the less prominent attribute. Whereas in the Broad Church ideal it is by far the more prominent; the Holy Ghost is comforter and solace in affliction.

Perhaps, without offending any religious scruples, we may go further to suggest that this ideal is not merely an incomplete version of the Christian ideal, but it is still further from being complete as a comprehensive religious ideal. If we consider the withdrawal from the storm and stress of the world which is the main feature of Monasticism, of Hinduism, and of Buddhism; if we consider the opposite extreme, the virile, masculine, pugnacious, proselytising and national spirit of Mahomedanism, of Judaism, of the mediaeval crusading Christianity, we realise the very definite limitations of the ideal. The Broad Church aspect is not complete.

It does not pretend to be complete any more than a broad-minded Hindu or Mahomedan pretends that his religion is complete: it is a national aspect, or an individual aspect of the great truth: it suits his own temperament. It is one man's or one race's vision of the ideal suited to their own circumstances, their own weaknesses, and their own aspirations.

The distinctive features of an ideal arise from the distinctive nature of the demand. The clash of peoples which has made India a country of wars and depredation produced the Quietism and the self-withdrawal of Hinduism, and, still more, of Buddhism; just as similar circumstances, the tumult of falling Rome, evoked a very similar creed in monasticism and Christian asceticism. So, too, in the individual, the

storm and stress of early adolescence often rebounds into a period of mysticism and self-absorption, often an actual temporary attraction to Eastern creeds and philosophy.

Not the origin, but at least the secret of the appeal of the teaching of Mahomed, and still more the reason of the definite interpretation put upon those teachings, may be found in the awakening of a national spirit in Arabia. We may trace a parallel in the teachings of English Puritanism, where God is decisively a god of battles whose enemies "vanish like smoke before him": this Puritanism was similarly the concomitant of a national movement.

Thus there is a psychology of the religious ideal, and we may find the reason why an ideal is such, in the human needs to which it gives satisfaction. The child, once the earliest unthinking stages have passed, has certain needs just as the adult. We have to discover whether the needs which underlie the particular instance of a religious ideal (of the Broad Church) which we have chosen as being one of wide educational influence, correspond to the needs of a child during the period of schooling.

That ideal was one of dependence, of love, of non-resistance. The child is a creature of more powers than opportunity. He has a sense of crude strength which he is anxious to use and convert into skill. He has wide imaginations which he seeks to realise in objectivity. He is imitative; he sees adult activities going on around him which he is anxious to emulate. Above all, a creature of vitality and energy he is being continually reminded of his insignificance, of his inferior position, of his economic unimportance. The thirst of the adolescent is to assert himself, to make himself known and recognised.

These are natural tendencies. We have here the mainspring of the ambition of youth, the ambition which supplies the impetus and the motive force of much of our after-lives. How far does the psycho-

logical basis of the Broad Church educational ideal correspond to these tendencies ?

Brotherly Love. The child's tendency is to emulate, to compete with, to outdo. His tendency is to make everyone not his enemy but his friendly rival. But the Church ideal is to love. Far be it from us to deny the place of love and brotherly co-operation in life. But these things are for those whose individuality is formed and fixed. You and I may calmly realise each other's gifts and deficiencies ; they are unchangeable data, for we are adult and fixed. But such an attitude to one whose powers are not so completed, but in daily formation, spurred onward by continual emulation of the achievements of others—such an attitude is an impossibility. Were it possible, it would be most disastrous in its effects on the development of the child's individuality.

Non-Resistance. We have here again a doctrine whose place in life cannot be for one moment denied. It is a modified version in a less degree of the self-withdrawal of Monasticism. The adult, tired of the conflict and stress of the world, discovers the truth that conflict may be avoided by non-aggressiveness ; it is possible to refuse to quarrel by adopting a negative attitude. But if the avoidance of conflict involves an adoption of the negative attitude, it involves equally an abandonment of the positive aggressive attitude. Here again we have a matter of temperament and age. A boy both in body and mind is developing in strength, is thrusting himself into the world. He is making a place for himself, and that involves a good deal of elbowing. He is forming a personality ; he is proud of it, and jealous of its recognition. These are not accidents or individual traits ; they are essential parts of every successful juvenile development. It is essential to the boy's after-life of strength and progress to elbow instead of taking hands ; and it is essential to his self-respect and self-reliance to fist back when he is elbowed.

“Turning the other cheek” in a man is tolerance ; in a boy it is lack of self-respect ; it is a sign of something radically wrong. It is a doctrine impossible to a healthy boy. If the schoolmaster finds it anywhere in practise he should open his eyes for some underlying grave ethical or physical defect.

Dependence. This is an attitude of more or less complete self-abandonment : “I am in the hands of God,” “God wills it so,” “God has arranged my life thus and is guiding me.” This attitude is closely associated with the attitude of love towards God. The love is rather of the feminine kind, though it is usually spoken of in terms of filial love. One might doubt if much of the literary idea of filial love is not an externalisation of feminine love by the mother. Certainly there is reason to believe that this supposed self-abandoning, loving dependence has no place in the normal male nature, child or adult, unless perhaps in one well past middle age.

Be that as it may, no emotional attitude could have less appeal to the young adolescent. The establishment of a self, development of powers, reliance on those powers, and a sense of independent and self-reliant personality brings naturally with it a resentment of any reminder even of the smallest dependence. Nothing makes the judicious disciplinary treatment of the adolescent more difficult than his touchiness at any interference with his just liberty and his independence. A fool tries to crush this, but it is the birth of manhood.

To preach to a boy at this stage, full of ambitions, full of a psychologically natural desire to carve out his future, that his future is in God’s hands and that he is an utter dependent—could anything be more unreasonable ? It is a doctrine for tired age, not for youth.

To the healthy boy God is a God, not of battles, for battles have little place in the modern scheme of life, even a schoolboy’s, but he is a God inspiring

energy, thrust, struggle. The prayers of a boy are prayers to win a football match, to gain a power : "Teach my fingers to do."

General Conclusion. Let it be clear that no criticism is aimed for one moment at the ideal as an ideal of life. But of *what* life? It is an ideal of age, of achievement past, and perhaps of the beginning of weariness of the effort by which it was obtained. It is the ideal of the grown schoolmaster, and for him an ideal full of beauty. And in realisation of its beauty, he has blindly set up as a mould for the youth under his charge.

We see here a repetition of the former fallacy of external imposition of an ideal construction in oblivion of the vital nature of the material which contains an ideal in itself. No modern schoolmaster in spite of the sectarian difficulties of the question would deny the place of religion in the school. If religion has a place in life, it has a place in the school. If in life it is the formation-ground of ideals, its place in the school, where the greatest and chiefest guiding ideals of life are formed, must be enormous.

These sectarian difficulties would be less acute if the parents of school-children would be brought to realise this fallacy of egoism in the matter of religious and pedagogic ideals. The religion of the man depends on the nature of the man. The religion of the child depends on the nature of the child. And above all it depends on the fact that he is a child. The religion of a normal child cannot by any possible means be identical with the religion of an adult of sufficient age to be the father. No doubt taking probable hereditary similarities of temperament into account, the religion of the boy when he reaches the age of parenthood will be the same as that of his father now. But it will most certainly not be so if an adult belief responding to adult needs and conditions be forced upon a young adolescent boy. The parent could take no surer means of vitiating his own aims.

There is latitude in every religion. There is an active, almost militant side of Hinduism: there is the crusading and chivalric spirit of Christianity, besides the gentler doctrine of the Gospel according to St. John. In the same faith there is room for a boy's belief and a father's belief. In whose hands the religious instruction may be, the schoolmaster, the parent, or the priest, it is his duty to evolve, not from his own aspirations but from the nature of the boy in his charge, what ideal to set before him in his development. That ideal may conflict with his own beliefs; it may seem primitive, aggressive, idolatrous, egoistic, self-satisfied. Mayhap it will be. But he may be certain that if he has understood the child rightly that ideal will develop in later life into something which he as an adult would admire. For all its crudeness it will make a man.

The Civic Ideal. We take, lastly, an instance of an education up to an ideal of citizenship. In a sense, of course, the public school educates to an ideal of citizenship. But it is rather the education of the ruler than of the citizen—in the word “citizen's” ordinary sense as one of the mass, the bulk of whose civic duties consists in obedience and co-operation.

Let us take as an instance the Boy Scout movement, because from any modern book of Pedagogy it cannot be omitted.

The Boy Scout Ideal. It is unnecessary to quote or explain at length because the ideals of the association are already well known all over the world. We would direct attention to the salient features. These are:

- (1) *The Imaginative substratum*, the playing at being a Scout. The idea of the scout has, however, been very considerably modified so as to avoid any military significance. The game is rather that of being Pioneer or Colonist. The qualifications demanded are very much those which would be needed by

one setting up for himself to live rather the primitive life of tracking, hunting, fishing, cooking, and generally doing for oneself in the Backwoods. This part of the training is carried out partly by means of outings and the camp, partly by means of the qualifying for various badges indicating proficiency in tracking, pioneer-work, carpentry, etc.

- (2) *The Civic Element.* The boy is taught certain virtues of social co-operation. The most noticeable feature in this aspect is the Good-Turn system. Each scout is supposed to perform a "good turn" or helpful action daily. Instances of good turns might be found in running a message, carrying a parcel, holding a horse.

At the same time every scout is supposed to possess certain accomplishments necessary to a citizen. He must be capable of simple First Aid; he must be able to swim and save life; he must be able to shoot. Some of the badges mentioned above are indicative rather of civic than "pioneer" accomplishments, such, for example, as elementary strategic knowledge of the country such as would be useful to the military in time of war.

A Double Ideal. We see here a very obvious mixture of ideals. We have on the one hand what seems almost like a "Back to the Land" ideal, a reaching towards the primitive open-air life of the past in England, of the present in some parts of the Empire, a reaction against the town, the vices and defects of civilisation.

On the other hand, we have a deliberate effort at moral training of an extremely practical kind. The Boy Scout movement spends very little of its time, if any, in moral teaching. It makes little effort to explain to the boy the meaning of citizenship, the fact that he is a unit in a co-operative whole, the nature

of that co-operative whole, its organisation, the rights conferred by and the duties demanded by membership. Such instructions as are given are rather of detail; they are injunctions not to ideas or motives, but to definite acts. This second part of the ideal aims at producing a boy who is in act at least, the beginnings of a citizen.

The Limitations of the Boy Scout Ideal. Obviously the chief omission of the system of training lies in the absence of civic idea. The boy is ready to perform certain acts of a civic nature; he will render first aid in a street accident; he will use his fists in a street row; he will use his bicycle and his knowledge of the countryside in case of war. But I fail to remember any instruction to use his wits in after-life in the case of an election, or his energies in the service of municipal government. I fail to recollect any teaching which would help the adult Boy Scout to consider the ethical aspect of a strike or an industrial problem, or the wider and deeper moral question of war as a racial problem. He would be inclined to shoulder his rifle in a second Crimea without having heard of Perris, or Norman Angel, or the Carnegie Fund.

This must not be taken as an adverse criticism of the Boy Scout movement. The obvious reply to it, were it such, would be :

(1) That the Scout movement is not intended for boys of an age to receive such instruction in the real meaning of citizenship in its deeper aspects.

(2) That such instruction is the duty of the school-master not of the Scoutmaster.

On the other hand, the Boy Scouts do contain boys of full age to be initiated into the rights and responsibilities of their social heritage. And further, the school-master has taken over the Scout movement into the service of the school. As a schoolmaster his powers are so circumscribed that, as a fact, be it his duty or be it not, he is unable to give civic instruction, and

all the ethical training which the larger number of boys receive is that imparted *via* the Scout training.

The Scout Movement as an Educational System.

The fact is that the movement has become a very great deal larger than the founder ever anticipated. It has taken upon itself a place in the educational system far greater than was originally expected or intended. It has embraced a far wider range of age than the scheme allowed for.

It has become very nearly a complete system of education in itself. It assumes the literary side as done in the school. (We have already criticised how this is done under "The Literary Ideal.") The Technical and the Civic side of present English education, so far as they exist at all, exist in the Boy Scout Training.

As a complete Technical and Civic education the Scout movement is obviously defective. It is defective on the civic side as catering only (though catering very excellently in those limits) for pre-adolescence, the age of simple injunction and habit-formation, not of understanding and progressive adaptive thought.

It is defective on the Technical side as teaching little more than hobbies and accomplishments, and those (as being accomplishments) wide and varied, rather than deep. It makes little endeavour at discovering special aptitudes, and producing ultimate specialisation for bread-earning. If it achieves this, it is an accident.

On the surface it was never meant for so wide a task as this, and perhaps it is hampered by the limitations of its original plan in attempting to carry it out. After all, Scouts is a game, a splendid moral game meant for small boys. Its training was not meant as the whole business of life. As a result one feels a discrepancy between a big boy learning all of manual skill that he will ever learn at school, and all of ethics that he will ever be taught, and the shouting of "Wah ! Wah ! Wah !" and camp-fire yarns.

As a matter of fact, speaking from my small experience, I find that where the Scout movement does really make an effort to supply the deficiencies of our educational system, an honest and courageous endeavour, "Wah! Wah!" and camp-fire yarns tend rather to drop into the background, and the Scouts become a strangely decorated and disguised supplement of rather a superficial nature to an unpractical and bookish education.

We would wish that the Scout movement were able to keep to its original confines. It is the fault of the educational system that it is unable to do so. The Scout movement was meant to do something in the earlier pre-adolescent stages which the school cannot do. An improvement of the educational system on Technical and Civic lines so far from weakening would by limiting it to its proper field strengthen this movement, one of the most remarkable in the history of education. For it is the first educational system to consider the demands of society and at the same time make provision for the tendencies and the ideal inherent in the child.

The Evolution of an Educational Ideal. In each of the three above instances the same fault is noticed, the externalisation of an adult ideal instead of an ideal from the child. In the last instance this error is least observable.

This danger of "externalisation" is inherent in the process of the formation of the ideal. There are two sides to this process. There is :

(1) What the child would naturally become ;
and there is :

(2) The man demanded by society for the purposes of social co-operation.

There are three sides to the ideal corresponding to three main directions of activity :

(1) The ideal bread-earner or worker.

(2) The ideal private individual at leisure.

(3) The ideal social unit.

To each of these there is the Supply aspect (the inherent nature of the child), and the Demand aspect (the demand of the society).

"Demand" and "Supply" are balanced in the formation of the first ideal (the bread-earner). "Supply" preponderates in the function of the second ideal (the individual at leisure). "Demand" preponderates in the formation of the third ideal (the citizen).

How shall we describe the ideal adult which is the aim of the education, the ideal image which we set up in our school? Description, except in the third case, is impossible. If we describe, we set up an idol in the school, and force living children into the mould. Only in the last instance is generalisation possible, because the social obligations are more or less the same for all members of the same social grade. It is a pure law of Demand. Hence political, national, and municipal duties can be made concrete in a picture of the ideal citizen demanded. Yet even there the qualification remains of the particular bread-earning activity. A town shopkeeper's social duties are not the same as a farmer's, nor a farmer's the same as those of a commercial traveller.

Once we begin to generalise, to talk about the ideal of the school, about the "Etonian," the "Marlburian," the "Uppinghamian," or any other -urian or -onian or -arian, we forget the Law of Supply in the child. We treat life as dead material, and we deny the very fundamental of the Law of Demand, the very basis of society—Variety and Difference. Society is a co-operation of various differentiated units.

The Ideal of a Schoolmaster. The Ideal which the schoolmaster must keep before him is not the ideal individual but the ideal Society. It is a Society that he is endeavouring to produce. And he must study the embryonic personal ideal inherent in the individual child considering how, doing least violence

to that development, he can fit each into the scheme of things.

In this sense the schoolmaster is a builder not of man but of mankind, of a nation, of the social organisation of the future. But of the child's soul he is no builder ; he is foster-parent.

CHAPTER XX.

THE SCHOOLMASTER.

IN a novel entitled *Mr. Perrin and Mr. Traill*, a vigorous but somewhat exaggerated attack is made on the life of the schoolmaster. In case the reader is not acquainted with the book, I may be permitted to make a somewhat lengthy quotation.

Mr. Perrin and Mr. Traill. Mr. Birkland is one of the staff of Moffatt's school, which appears to be a type of the lower-grade Public or large secondary school. Birkland seems to be the author's mouth-piece; he is speaking to Traill, a young "Blue" fresh from the University, who has just joined the staff:

(B.) "And so you like it?"

(T.) "Yes, immensely."

"Why?"

"Well, why not? After all it gives a fellow what he wants. There's plenty of exercise, the hours are healthy—the fellows are quite nice fellows. I like teaching."

"Yes, how long do you mean to stay here?"

"Oh, a year, I suppose. Then I ought to get to Clifton."

There was a pause, and then Birkland said, "And so you like it?"

"Yes, of course, don't you?"

Then Birkland spoke: "You had better not ask me, young man, if you want an encouraging answer."

Then very slowly after another pause the words came out: "I am going to speak the truth to you to-night for the good and safety of your soul, and I have not cared

for the good and safety of anyone's soul for—well!—I should be afraid to say how long. I am afraid I do not care very much about the safety of yours—but I care enough to speak to you; and the one thing I say to you is—get out—get away. Fly for your life.—If you don't you will die very soon—in a year perhaps. We are all dead here, and we died a great many years ago.

“Have you ever looked round the common-room and seen what kind of men they are? Well, you would have seen what I'm telling you written in their faces right enough. Mind you, what I'm saying does not apply to the first-class Public School. It's a different thing with the bigger places. There there is more room; the men don't live so close together; they are paid better; there is a chance of getting a house; there is the esprit-de-corps of the school, but here . . . get out of it, Traill. You say in a year's time. Don't I know that? Do you suppose I meant to stay here for ever when I came? But one postpones moving. Another term will be better, or you try for something, fail, and get discouraged, and then suddenly you are too old—too old at thirty-three—earning two hundred a year . . . too old, and liable to be turned out with a week's notice if the Head does not like you: turned out with nothing to go to; and he knows that you are afraid of him and he has games with you. . . . You think the rest of us like you. Soon something will come—already you dislike Perrin. You must not be friends with the Head because we shall think you are spying on us. You must not be friends with us because then the Head will hear of it and will immediately hate you because he will think you are conspiring against him. You must not be friends with the boys because then we shall all hate you and they will despise you. You will be quite alone. You think you are going to teach with freshness and interest; you are full of eager plans, new ideas. Every plan, every idea will be immediately killed. You must not have them—they are not good for examinations—you are trying to show you are superior. . . . Wait! It goes deeper than all these things. It is murder, self-murder. You are going to kill, you have got to kill every fine thought, every hope that you possess. You will be laughed at for your ambitions, your desires. You will

not even be allowed any fine vices. You must never go anywhere because you are neglecting your work. You have no time. Here we are—fifteen men—all hating each other, loathing everything that the other man does—the way he eats, the way he moves, the way he teaches. The holidays come and you go out into the world to find that you are different from all other men, to find that they know you are different. You are patronising, narrow, egoistic. You realise it slowly; you see them shunning you—and then back you go again. God knows, they should not hate us, these others, they should pity us. If you marry, see what it is—There is marriage, no money, no prospects, perhaps in the end starvation. And gradually in the end there creeps over you a dreadful and horrible inertia, you don't care, you don't think, you are a ghost. . . . Only towards the end of term when the examination comes there creeps about the place a new devil. All our nerve is gone; our hatred of each other begins to be active. It is the end-of-term devil."

"My word!" said Traill. . . . "What a horrible picture of things. You must be out of sorts. Why, it's hysteria!"

"Of course you don't see it. Besides, it's the beginning of the term. . . ."

Precisely how much truth is there in this picture?

What is required of the Schoolmaster. The schoolmaster's duty is to prepare a member of the future for his duties. These duties are threefold. The child must be prepared

1. As a bread-earner;
2. As a private individual capable of using his life and leisure well;
3. As a citizen.

For the first duty it is necessary that the teacher of this child should be acquainted with the means of bread-earning. These means are the trades and professions. In the simplest stages the trades consist in the simplest arts of mankind, carpentry, spinning, weaving, building, agriculture, the preparation of food. In the higher stages these arts develop into the complex processes of modern manufacture. As a part of these

arts, both in their simplest and more complex form, are certain theoretical studies here applied to particular purposes. Such studies are Mathematics, Science, Business management, Letter-writing, Geography, and the rest. These are a correlative of the actual constructive work.

First, the schoolmaster must (1) be able in the early stages to teach the general simple arts of life. As time goes on (2 *a*) he must be able to diagnose the child's particular powers so as to know in what direction he may most profitably specialise. And (2 *b*) he must have a knowledge of the demand for labour, particularly the demand of the particular district, so that he may advise the child to prepare himself for a branch of activity where his help will be needed. (3) He must be competent either to instruct children in one of the more specialised branches, or have the knowledge necessary for directing their instruction under specialised teachers, each of whom will need somewhat of the educative powers as possessed by himself.

Secondly, the schoolmaster or school-teacher must be a man of cultured leisure. He must have tastes outside his technical school work, and the opportunity both in time, and so far as money is needed, in money, to cultivate them. For it is necessary that he should be able to teach his children how to employ their leisure time. He must not only have the power of teaching, but the opportunity to set an example. He needs here again psychological judgment of children so as to guide the child's choice in the selection of his leisure occupations in accordance with his particular gifts.

He needs for the same reason to be an athlete, since this is a most important branch of the leisure subjects. His athletics must not merely be confined to the school play. He must have his own athletic interests, so that he may retain his powers and give a proper example of the place of these powers in a man's life.

Thirdly, the schoolmaster must be a man of character. Character is a social quality. He must have a position in society. By society is meant :

- (1) The life of the family.
- (2) The life of the town.
- (3) The life of the country.

He must, therefore, be a married man, for he must set an example to his pupils of fatherhood. He must be a social man, for he must set an example of sociability, unless he would have his pupils misanthropes. If his children are to perform in after-life municipal duties they must see the example of performance in one who is able to bring that example home to them, and at the same time to instruct them in the meaning and nature of those duties and rights. Similarly, it is necessary that the schoolmaster should be a man of reasonable political interests ; he should not be a partisan, even if he be convinced, because of his position with regard to the parents. He should rather adopt an external attitude of earnest criticism and anxiety to give a just opinion unbiased by party division.

In addition to the duties of a citizen he must have the character of a citizen, and of one of the most responsible citizens. He must have the power of command, and of responsibility, and of obedience. He needs also the technical knowledge and skill of a schoolmaster in the discipline of boys.

It follows from this that the schoolmaster should be highly paid, because his capabilities must be great. His knowledge, skill, and character would enable him in any other profession to make for himself a very large income. Only his ideals lead him to take up this position. He must be compensated for this. If he sacrifices his life to his ideals he demands at least that he may be placed in a position to fulfil them. He demands also that if he is found to fulfil them well in a small field he shall readily be given a position of wider scope and greater responsibility. He makes the further reasonable demand that as, by entering

this profession, he has abandoned his opportunity of providing for marriage or for his old age, his salary shall be sufficient for him to make such deductions from it without at the same time narrowing his life and activities.

It follows, secondly, that if the schoolmaster is to remain up to date, and teach our children the knowledge not of his own youth but of the present day he must have ample opportunities for study. By study we do not mean book-study, but practical work, putting himself in touch again at frequent intervals with the activities which he is teaching. The schoolmaster's vacations are for this purpose—to learn what he will teach, to keep in touch. These vacations must be of sufficient length. Opportunity must be provided for such study: and if necessary compulsion must be exerted to ensure that they are so used. In addition to vacations which are not sufficient for the purpose, being so short and scattered, there must be intermittent leave.

Lastly, the schoolmaster's life is a most strenuous one. It is nerve-racking; age comes quickly. An aged man, nervous and growing stereotyped, is not the right guide for children. Superannuation must be early.

The Present Condition of the Schoolmaster. We have in contrast to this a very different picture, of incapacity, over-work, nervous abnormalities, under-pay, hopelessness of prospect. We cannot deny but that the picture is largely true. What is the reason of this?

A schoolmaster is leading an unnatural life. With the instincts of a father he is compelled to put himself in the position of a despot. This is not a natural position, nor is it the essential of a school. There is none of this stern disciplinary position in the football field. Why? Because here the boys are taking part in an activity which is natural to them. They are going and being led, instead of being driven.

If a father were compelled each day to make his

children do against their will things which they knew instinctively to be bad for them, or at least no good, the nature of the father would suffer. It would suffer from the necessity of perpetually assuming the character of a merciless petty tyrant: it would suffer most from the suppression of his parental feelings. Madness or eccentricity are the result, as Freud shows, of such suppression of natural tendencies. The schoolmaster is eccentric, neurotic. Often the common room is a field of petty quarrels and jealousies and hatreds. There is something so invariable about this abnormality (greater or smaller, yet almost invariable) of the schoolmaster's nerves that one cannot but expect some inherent cause for it in his profession.

The schoolmaster's life is unnatural in a second way, as unnatural for himself as it is for the boys. He has divorced himself from the ordinary activities of mankind. He has abandoned the objective and active attitude. He has made his profession, and the work of the larger part of his day, studies, which to the ordinary man are a relaxation when the body is tired when the balance of its ordinary organisation is upset.

Schoolmasters, like their pupils, were at one time young and eager for activity and self-expression. From day to day these impulses are checked. Even the book-study itself is not a form of mental expression as it is to the ordinary man, for a teacher thrusting in rudiments is neither expressing himself, nor teaching the boys to express themselves. If this continuous abstraction from objectivity and action is dangerous to the boys in four or six years, if it turns them into mere readers and scholars whose academic success seems to bear no relation to success in life or even to character, what is it to the teacher in sixteen years, twenty years, forty years?

During all that time the teacher is shut-off from the current of life, from touch with the world of realities. For his curriculum never leads him to it, but always pulls him away. His interests become narrowed, for

there is nothing to widen them. The school is continually converging upon itself.

The workers of the world outside are credulously generous. They support the system in a blind belief and parental altruism. But their support rests on no reason, and is justified by no results. They feel that it is right that their children should be educated. "They shall have every chance." But they do not really see in what way education helps their children ; they do not see how it gives them a single power to follow in their fathers' footsteps and do more also. They do not see in what way it prepares them to earn a living or yet to lead happy lives. The most is that it vaguely does something for character, alas not always that ! They give money unstintingly to hospitals ; they will enthusiastically endow scientific research ; they can see how these help forward the future and do something for the well-being of man. But the donation to education is like the contribution of a sceptic to a church offertory : it is the thing to do ; they don't see the use of it ; they will give. And they give, blindly.

It is not that there is any hidden value in present education that people are too dull to see. Parents are very keenly alive to the benefits of their children. A children's doctor can make a fortune ; baby-food specifics are said to be profitable. We may be sure that however poetry and art, or even science, may suffer for lack of appreciation of merit, this will never be the case with an education which deserves it. People *look* for the good in the schools year after year. They welcome each new idea, each new movement. There was the Elementary school movement in the early last century, missionary education movements, the Secondary school movement, the Science and Art movement, the Education of Woman movement. Each started with unstinted reckless generosity. One by one they are found out. People go on believing with their lips ; but they are heretics in their hearts. They

know something is wrong, wrong right down at the bottom, but they are refuted by "Psychology" and fed with passing crazes, and it goes on, a grudging obedience. And the schoolmaster starves.

The schoolmasters are underpaid, and hence badly recruited. And bad recruitment leads to worse pay because the teachers do not seem worth more. There is no revenge except a national weakening of character; nor reform because there are no Arnolds in the schools of the nation, but only disappointed second-rate Oxford and Cambridge men who failed to pass the I.C.S. and have not the capacity for business, mixed up perhaps with a few idealists, who if they had known how their ideals would be killed lingeringly, would have bidden their ideals commit suicide first. And struggling with these are men from the junior Universities whose upbringing sometimes makes the standard of pay seem more generous. But these are handicapped because men from the older Universities get the preference, especially in the secondary schools.

There is no one to reform, because the reformers go elsewhere, or once in the school they dare not be heretics. No one outside knows. Or if they know, they are only laymen, the "notoriously ignorant parent," or the "perpetually captious reader of the *Mail*."

Only one thing in education has succeeded: the athletic discipline of the upper classes. So we are assimilating the education of the skilled workers in mills to the ideal of the Governor with a private income.

The Future. "Wolf! wolf!" has been cried so often that the crier has been gagged and no one will bother. The "wolf! wolf!" of the present is being answered with a mockery of manual training, of cutting purposeless wooden joints by boys who will go out into the world to spin cotton ignorant of all beyond their one process, ignorant of anything which can make them skilled workers in any true sense of the term—men of initiative and thought, ignorant of

business, ignorant of politics, ignorant even how to spend their leisure time except in the music hall or the picture palace.

We look enviously at German education, and marvel at the Gymnasium, whereas it is the little makeshift effort in after-school technical education that has brought forth the German scientific workman.

The first country to adopt primary industrial training, and secondary technical training as the basis of national education, will put upon the market not a scattered instance but a nation of skilled workers, an overwhelming factor in the trade of the world. If that education teaches the child how to teach himself, if it teaches him to use his leisure time, if it teaches him not the duties of citizenship but how to perform them, the nation will be invincible in character as it is in skill. If it teaches the child for his trade and for his grade, according to his capacities, so that those who are business men may be business men, and those who are governors governors, instead of educating the poor with the education of the rich, and the voter with the education of the diplomat or the member of parliament, it will produce not merely a government of born and skilled governors, but a state of willing co-operative citizens. And it will make education an instrument of, instead of a drag on, progress. And for this we need not so much new schools but a new race of teachers, and a new place for them in the world.

CHAPTER XXI.

THE SCHOOL.

Scheme-making. The obvious reply to every critic is : “ It is very easy to show faults, but can you propose anything better ? ”

It is a very just reply. Throughout this book many criticisms have been levelled against the school system of the present. But to propose something in the place of that system is a task of far greater difficulty. In fact, if the author be asked, “ Could you write down a scheme which could be put straight into practice to-morrow,” the reply would have to be negative.

Such a scheme could be written. Schemes are easy to make. One can draw up courses, design buildings, take off quantities, estimate costs, submit lists of apparatus, and so on, but the very simplicity is dangerous. It is all a mere fiction. The only scheme worth having is that which is merely a written epitome of what has actually been worked out in practice ; or else it is an elastic outline of the ideal to which we reach.

I will endeavour to work out the second.

Four Main Questions. There are four main questions to be considered :

1. In view of previous considerations, what general type of school and curriculum should be the unit of the educational scheme ?

2. In what way may schools of this type but of various grades be put together and correlated with

present existing institutions so as to make a continuous course ?

3. What would be the cost of this course and of the proposed type of school in salaries and in apparatus ?

4. How do you propose to set about the actual realisation of this idea ? To this we may add the question : What would be the effects of this school course, if successful ?

THE TYPE OF SCHOOL AND CURRICULUM.

Cumulative Specialisation. As opposed to the present "general education" curriculum producing boys all as like each other, as uniform in qualifications and tastes, we must devise a system whereby boys may be produced as *unlike* each other. For we have already seen that the social demand is for difference, not for uniformity.

At the same time the mere specialist is undesirable because—

1. He is unable to see the relations of his work with the work of others.

2. Should there be a momentary failure in demand for his particular type of work, he is useless and unemployable.

Hence we need what may be called a Cumulative Specialist. One who knows many things, but one better than anything else.

His knowledge should be arranged in a decreasing scale according to his abilities. One thing is known very well, the next well, the next fairly well, and so on until one reaches the mere smattering of a subject for which he possesses no taste or ability.

Thus—

1. He has an increasing knowledge of various subjects as they draw nearer to his own special ability. In this way the narrow specialist is avoided. Rather, a broader mind is produced than by the "general education." For instead of knowing many things

equally indifferently and one out of all proportion, he knows particularly well just those subjects which constitute Broadness for one of his type of mind and of work.

2. In event of lack of employment in the particular branch of work, there remains a succession of other qualifications to fall back on. Hence the educators are freed from the chief fear of the technical school, namely of producing workers for whom there may be no employment.

How can these aims be achieved ?

Wideness at the Start. Four points are to be considered :

1. When a boy enters the school his powers are utterly unknown.

2. Whereas, as most schoolmasters agree, the actual knowledge acquired by a boy in his first few years at school is not of great importance.

3. The chief aim of early schooling is to learn the boy's powers.

4. A boy when he first enters school is in actual need of being widened. He comes from the narrow horizon of the nursery. He needs to look about and find himself at home in the world.

For these four reasons it follows that a boy on first entering school should be set to study the widest curriculum possible. He should see and learn and do a little bit of everything. And from doing a bit of everything the boy begins to suspect what he can and cannot do. And his teacher also sees what the boy can and cannot do.

Thus from the widest base possible, we proceed to narrow the boy down. How ?

Negative Specialisation. It is a mistake to say that all boys are alike until adolescence. We say this glibly of other boys. But we should have been the last to admit it of ourselves. And we do not admit it now. Look back on your own childhood, and even at the earliest date you can remember you knew that

you differed from others. There are not, it is true, well-marked special tastes in childhood such as are developed at adolescence. Nor yet is there in many cases a sense of special power. But there is a sense of special inferiorities. We may or may not have been conscious that we did so and so better than the brother or friend could do it. But we did know that we could not do such and such as well as he. The sense of special inferiorities is a biological necessity to the child. For, on the one hand, it spurs him to special effort ; on the other, it teaches him to avoid unproductive work.

In total we may say that the reason why I am doing one sort of work now and you another, is not that each had a special call to a special sort of work, a sense of one special ability ; for it is doubtful if there is such a thing except in the case of the more or less "one sided" person. Even the dullest of us has many special abilities of equal strength, and many special disabilities. It is by a gradual avoidance of these disabilities that we reached a stage where several choices lay before us, and we chose finally on an economic basis, according to the momentary demands for these kinds of work.

We know what we cannot do far better than we know what we can do. On this basis specialisation should proceed. In a few cases special positive ability is obvious. Here we may make a positive selection. But in the majority of cases it is the special disability for which we look. It is not necessary to say that "such a boy is no good at a particular subject." All we need to say is that he is not specially good. He is merely medium or below average. If he is merely a bare average, that subject is of no use. For there is no economic demand for "average ability" or "medium ability." It is special ability that is needed.

And special ability is reached by a gradual dropping of the bad and merely medium subjects.

Hence our school must start with a very wide curriculum ; and each year a subject or two is dropped,

as soon as a boy is seen to be below average or merely average.

In this way, by the gradual weeding out of subjects, each boy possesses finally a scale of knowledge decreasing as it goes further and further from his special powers.

Before we give an instance of the working out of this system another point must be brought forward.

TRADE AND PROFESSION.

Over-stocking of the Professions. At present England and indeed nearly all civilised countries are suffering from an overcrowding of the professions.

The main reason of this lies in the ambitions of the parents. There is a prevalent idea that the professions are "better" than the Trades. "Better" here means socially better.

The cause lies also with the sons. Professional work seems to them more attractive. It is more attractive because it is more self-expressive. It is more expressive of self because it is more developed, more intellectualised. Doctoring is a science. Salesmanship, manufacture and office-work are more or less mechanical.

This is a most dangerous state of affairs. The economic basis of a nation is the directly productive part of it, namely, that actually engaged in separating out the materials of life from nature, and that concerned in adapting those materials for human consumption. The original society was a union for the purposes of obtaining food, by agriculture, hunting, or plunder.

As dependents upon that society, existing only in virtue of the stability of the original union and purpose, arose practices of art and sciences, not of a directly productive nature, or not productive in any way at all—namely, the Professions.

The profession arose from prosperity of the Trades. Over-stocking of the productive trades merely makes

the basis of society unnecessarily strong. Over-stocking of the professions breaks down the whole structure. Society becomes parasitic on nothing.

The Professions and Wealth. Over-production produces an export trade and the accumulation of wealth beyond actual necessity. The possessor of wealth tends to abandon the original productive employment and to devote himself to one of the superfluous arts—"superfluous" in the sense of not absolutely essential to the existence of society.

The direct producer is paid in direct proportion to his produce, which supplies a standard need, and has at any one moment and any one place a standard price.

But the superfluous worker depends for his payment on the amount of superfluous wealth, and is paid not at a fixed rate, nor yet has his work a standard value. Hence he is usually under-paid.

The possessor of superfluous wealth is able to pay for the education of his son, and the son practising a profession of only nominal emolument, restores the superfluous wealth to the community, and thus the balance is maintained.

In fact, the professions are by nature the work of the wealthy classes.

The Attitude of the Productive Classes to the Professions. From this we may trace the attitude of the parents towards them. A system of free education has made it possible for a child of the Productive classes to qualify for the profession naturally followed by the child of one successful in that class and now one of the wealthy class. Hence the feeling that the professions are "socially better."

But the process is a most dangerous one. From this feeling on the part of the parents has arisen the demand on the part of the Productive classes for a free professional education modelled on the education of the wealthy Professional classes, so that the sons of parents engaged in Productive work may become pro-

professional men; and they are to become professional men irrespective of their absence of private means to supplement the nominal professional salary, and irrespective of the ability of the community as a whole to afford more professional men. Both these points are regulated automatically in the normal state of affairs.

As a result, the best of the Productive classes are drawn away to become superfluous competitors in the professions. The brains are drawn away from the Productive workers, and the work becomes not "self-expressive" nor "intellectual," so that the children of the next generation shrink from this type of employment.

If the group of directly productive activities which we may call for convenience the "Trades" are to become attractive as self-expressive pursuits, the best endowed children of that class must be kept there :

(1) by making schools which will teach these activities as the arts and sciences expressive of the best of a man, such as actually they are ;

(2) by making it impossible, or at least extremely difficult for anyone of this class to adopt the Professions. It is not that the Professions are a class preserve, but it should be extremely difficult for *anyone* to enter the Professions. It should in the interests of society be an expensive process, a difficult process, a long process.

It is a suicidal form of philanthropy to wreck the education of a nation to please the ill-informed snob-bishness of a small section of its best citizens.

Trade Schools and Professional Schools. Hence at the outset let us divide our system of schools into two : Trade schools, free, compulsory ; and Professional schools for which a high fee is demanded, more than the actual cost of the schooling, that fee being devoted not to the particular school only but to the general educational expense.

The present system has been as follows : The education of the wealthy classes is cheap, being a largely "pen and paper" education. But the fees paid are

large. The education of the working class is expensive, being technical, but the fees are small. This disparity has been solved by devoting the surplus of the professional education to scholarships and various cheapening devices, so that children of the Productive Trades may enter. On the other hand, the cost of the Technical education of the working class has practically prevented it being given to any except criminal children or to normal children in a stinted and ineffective manner.

The Professional education should be made as expensive as possible, and the surplus should be devoted to meet the deficit in the Technical or Trade education.

Let us now see if we can devise an imaginary system of separate "Trade" and "Professional" schools which will give the very widest scope to specialisation, and will include the largest possible amounts of selections, especially on the negative basis, and will be always in touch with the labour needs of the country.

However, let it be remembered that in constructing this scheme we are at first merely working out in an untrammelled Utopia the ideal we hope to reach. Later we shall consider its possibility.

The Scheme of Trade Schools. Education proper cannot be made to begin until some personality has developed. Up to the age of ten, children may go to Kindergarten and there make some start in the groundwork of education, namely, the three R's, and elementary manual skill and of thought. Madame Montessori's work on the early teaching of children leads one to hope much for the Kindergarten in the future.

Thence the boy passes to the Preparatory Trade School. The main function of the Preparatory Trade School is selection.

The curriculum, as we have seen in previous chapters, here as in all schools must be divided into three parts : Technical, namely, studies such as prepare the boy for his actual bread-earning work ; secondly, Liberal, such

studies as teach him how to employ his leisure time ; finally, Civic, the bases of social duty.

In the first, Technical, some five or six trades are practised. What six trades are practised is, of course, determined by the situation of the school. A different set of trades would be taught in a school near Evesham from what would be taught in a Manchester school, or one in Whitehaven, or again Poole, or again Yarmouth—and different again according to the part of the town. For one school needs to have children for one range of trades, and another for another. The more schools are specialised the greater the range of subjects, and the greater the efficiency in each subject.

These are days of tramways, motor buses, and cheap rail fares. The ideal should no longer be to take the school to the children's door. Children can come easily enough to the school door. Our object is to take the school to the door of the various activities of the country, to have schools in touch with every sort of bread-earning activity and every sort of life, preparing new initiates.

Suppose, for argument, a simple agricultural community—farmer, builder, carpenter, tailor, shop-keeper, shoemaker. These six occupations are taught in the very simplest form in the first year. Practically, it is only complicated and skilful play. There is a patch of various crops, design of a house, a house built on a small scale, a little shed in full scale, some simple furniture, some sheep, some simple clothes, a small shop with its accounts in excellent order. It is merely play.

In connection with these the special arithmetic and writing work needed by each subject is done—accounts, letters, diary, the reading up of a subject in simple books.

After the day's work there is story-telling and story-hearing ; drawing ; music ; reading ; tales of history and travel.

And a simple set of lessons in Hygiene, and in the

meaning of the simplest and nearest elements of citizenship, a bye-law, a town council, police, fire brigade, etc., how they have come about, and, on almost Boy-Scout lines, our duty to them.

The Method of Teaching. This does not sound very formidable, except that it is clearly a mere smattering of many things. But the essence of it lies in the way in which it is taught. Rather it is not taught. The teacher explains very clearly what is to be done and how to learn to do it. Then the children go out and try. The idea is not to get the children to do it, nor yet to produce ideal results which can be shown to parents and other unsuspecting persons. The idea is to see which children can and which cannot do it.

In fact, the method of teaching is rather that of the old Public school than of the Elementary school. In the Public school nearly half the time-table is "Preparation," viz. individual work, not "being taught." So here there are practically alternate half-hours of demonstration and hours of unassisted practice. For the aim of the school is selection.

The Second Year—Age 11. In the second year three out of the six Technical occupations are rejected, leaving three; and one out of the Liberal occupations, viz. literature, art, music. There is still option of change during the first half-year. These subjects go on, but at a higher standard and higher speed, because only the children of some ability are studying these. The Civic course goes on as before, including here more complex material with a certain amount of tracing back of origin.

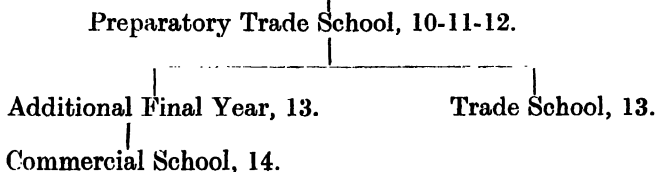
More complicated apparatus is needed here for the Technical work, for we have passed beyond the age of mere toys. But the number of students in each subject is less owing to selection. Moreover, by arrangement of the time-table, assuming equal distribution, all the apparatus can be in use all the time, since it is not a class system but a "Private study" system under peripatetic inspection.

The Third Year—Age 12. One trade is rejected, leaving two only. The Liberal subjects go on as before, but more particular specialisation is allowed, *e.g.* a child may devote himself solely to a certain form of a chosen art, modelling, or drawing or painting, or handicraft. The Civic subjects continue as before, but are more advanced.

The First Selection. (From Preparatory Trade to Commercial school.) By this stage it will have been seen that some boys are of practical capacity, and others of rather secretarial, "pen and paper," capacity. Some have physical skill, others rather mental or clerklly ability.

Those of physical skill are sent out at this stage to the Trade school, while the others are retained for a final year in the Preparatory Trade school. During this final year (13) they give special attention to desk subjects, and then pass on to the Commercial school.

Thus up to the present we have—
(Kindergarten)



The Trade School. At the end of the last year of the Preparatory Trade school the boy rejects one trade from the two remaining. Should there be doubt as to this final selection, it may be delayed until the end of the first term at the Trade school when something more will have been seen of the advanced stages of each trade, and of the existing demand.

The chosen occupation is studied for two years. In addition there is a simple scientific course dealing with such theory as bears directly on the trade. Also a mathematics and business course including such knowledge only as would be necessary to one employed in

that trade. The Liberal course continues practically in the form of Clubs for the various arts ; a boy may join one or two. The Civic course is specially adapted to the particular future life of the various group of boys.

In the third year the boy specialises in a particular branch of his trade, *e.g.* cutting or fitting, etc., in tailoring, and spends his final year in study devoted to that. The final specialisation is regulated by the demand in the various branches.

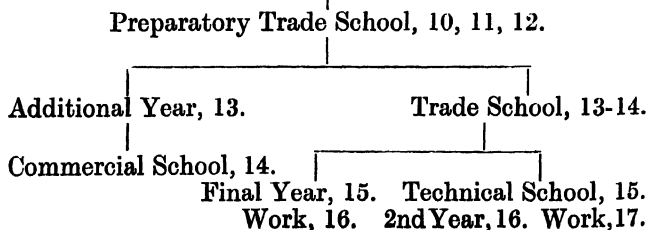
He goes into apprenticeship or work at the age of fifteen.

Second Selection. (From Trade to Technical School.) By the end of the second year at the Trade school it will be clear that some boys are of merely ordinary physical skill, whereas others show special powers in the scientific side of the subject, and are capable of development in the higher branches of the subject to become foremen or managers.

Such boys are sent at the age of fourteen to the Technical school. Just as the Trade school is fed by several Preparatory Trade schools, so also the Technical school is fed by several Trade schools.

The Technical school may give a two-years' course. The boy will go into apprenticeship or work at the age of seventeen. Boys of exceptional aptitude (*viz.* about 5 per cent.) after the second year may go into a two or three-years' advanced technical course at the University.

Thus up to the present we have—
(Kindergarten)



The Commercial School (14, 15, 16). The Commercial school takes pupils for the Preparatory Trade school after an additional year.

The Commercial school course is of two years' duration. In the first year general office work is taught, with a wide experience of many types of business.

In the second year those of ordinary ability will receive a final year's training in a special branch of lower grade work (according to the demands). The small number of boys of higher ability will select a general type of business to be studied for the second year.

In the third year a training is given for a particular kind of business. The kind will be determined largely by the demand. Boys of special ability may be sent to take a two- or three-years' course at a University after a third year of advanced work at the school.

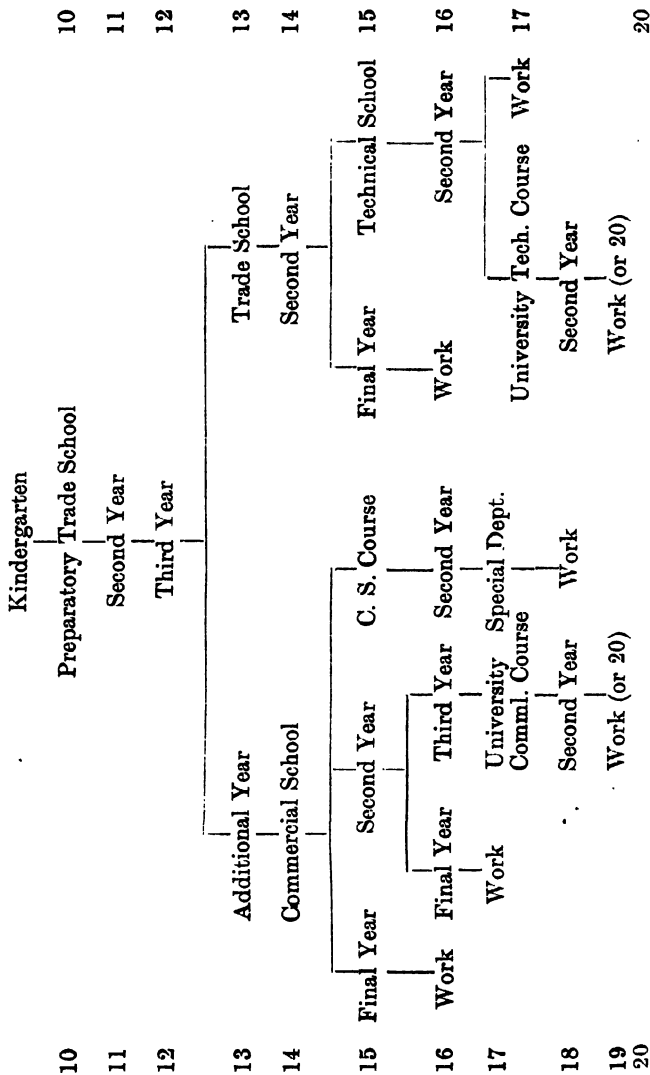
But at the age of fifteen, the beginning of the second year of the course, certain boys of abilities which seem adapted to the requirements of the Civil Service are shifted to a three-years' Civil Service course—the first two years general Government office routine, the third special preparation for a particular department, according to the demand.

The Professional Schools. Detail need not be given of the Professional schools. This is a far less pressing problem, in spite of the fact that a Royal Commission is enquiring into the efficiency of the Public Services.

It is a less pressing problem because the famous Public schools, though they may not have produced knowledge of the present day, have undoubtedly produced something of the character of Public servant. Perhaps the examination system of selection does not tend to select the best of their products.

But for all this the same criticisms apply—that the successful products of the Public schools are produced

TRADE SCHOOLS



at an enormous cost both of time and of unsuccessful products.

Moreover, the Public school spends six years producing uniformity, and it takes four years at the University, and as many again in some form of professional apprenticeship, to guess at the boy's abilities and tastes, and develop sufficient difference to produce a man of a Profession.

Hence the extension of schooling in the professional classes. We disguise the boy's abilities, and then hunt for them.

A scheme of professional schools would consist of—

1. Primary Professional School—3 Years.

The simple elements of medicine, law, politics, business, etc.

Modern languages.

Citizenship.

Liberal subjects (greater stress than in the Trade school).

A three years' course, with selection of four subjects in the second year, and three in the last year.

2. Professional School—4 Years.

Selection of two subjects at the end of the first year, of one at the end of the second year. General study of one subject during the third year. Special preparation for the University during the fourth year.

The University. The University will test the boy in the elements of the subjects he will study, since a University professor cannot be called on to teach the simplest elements of his subject. But the University has neither the right nor the power to examine other work of the schoolmaster.

At the end of the third year the student specialises in a particular branch of his subject according to the demand.

Selections.

At Age of	From	To
12	Preparatory Professional School - - -	Preparation for Navy or Army.
13	Preparatory Professional School - - -	Business Course at Commercial School.
18	Professional School -	One year's special preparation for Civil Service course at University, Or a Professional course at University.
19	At University - -	To preparation for special department of Civil Service, Home, Indian, or Colonial.
21	At University - -	To preparation for special section or province of the civil service.

The Professional Schools. In all stages these are the three parallel courses—Professional, Liberal, and Civic.

The Possibility of the Scheme. In the form in which the scheme has been outlined above it is assumed that we start with a *carte blanche*, that in every department we found totally new schools after our hearts' desire. This may be useful as a method of thinking, for it is unfettered. But such a scheme cannot be a practical proposal.

Schools already Existing. There are already existing schools, of two kinds :

1. Liberal schools, giving a "general" education in literary and artistic subjects, also in pure science (which should be classed as a Liberal subject).

2. Technical schools, giving, for the most part, a special education in skilled work, or in applied scientific work, or in professional studies.

THE PROFESSIONAL SCHOOLS

Preparatory Professional School, 10, 11, 12

Army or Navy, 13	Final Year, 13	Final Year, 13
	Professional School, 14, 15, 16	Commercial School or Technical School, 14, 15, 16
Civil Service Course, Final Year, 17	Professions Course, Final Year, 17	Work, 17
C.S. Course at University, 18	Professions Course at the University, First Year, 18, Second Year, 19	
Special Department, 19, 20	Final Year Special Sections, 20	
	Work, 22	Professional Apprenticeship, 21

The Liberal Schools. We have suggested that these schools are not really giving a "general" education, but one which is a part of a special education, an adjunct to Technical education (using the term as meaning education for the bread-earning work, Trade or Professional).

In fact, these schools are giving as a whole education that part which we have mentioned in the above scheme as "Liberal" and "Civic" subjects.

The Technical Schools. Under this heading we include Trade schools and Artisan schools in the primary grades, and "Technical schools" in the ordinary sense in the secondary grade, besides Commercial schools and Colleges teaching professional subjects.

The Technical school system is at present in a state of flux. It is found difficult to combine practical efficiency with skilled teaching. Moreover, there seems to be an unwillingness to take up the Technical courses on the part of boys and parents. It seems to be too extreme a decision.

It is too extreme a decision because our educational system has been divided into two parts, Technical and Liberal. The Liberal schools give no technical instruction, but seem to despise it. The Technical schools give no liberal instruction, but seem to despise it.

We have suggested that the true distinction between these two is not the distinction of manual and not-manual, nor that of scientific subjects and not-scientific subjects. It is the distinction between work and play. A man must be prepared for the work of life, and for the leisure.

Thus our educational system has been divided into two parts, work and play. The play-schools (or Liberal schools) teach nothing but play (leisure subjects) and despise work. And the work-schools teach nothing but work and despise play.

It ceases to be strange that persons shrink from the

extreme step of deciding to do nothing but work in life, and of being prepared for nothing but work ; and that such persons appear to be "narrow," "over specialised," and all the other accusations against the Technical school pupils.

While for the most part, though realising the partial value of the Technical school, people crowd to the Liberal schools. Possibly it is the better of two bad alternatives.

What, then, is the answer ?

The Relation of the Technical and the Liberal Schools. Surely the answer is that if Technical and Liberal schools have sprung up separately, they have done so for a very good reason. They have very different requirements. The leisure arts are more or less the same everywhere : a Technical school must be specialised to its district. A Liberal school may be founded anywhere ; Technical education must be highly centralised. The type of building, the type of teacher, the type of curriculum required in the two schools is widely different.

But that these schools have sprung up separately is no reason for their remaining separate. In fact, the separation is preposterous. In it lies the root of the whole evil. In its abolition lies the secret of the whole cure.

Let us lay it down as a rule that no Technical education be given without Liberal, and no Liberal education without Technical. This applies to every stage of schooling—primary, secondary, collegiate.

Let us also recognise that the two divisions of education must be dealt with by separate schools. The boy will spend the early working part of his day at the Technical school, and the latter part at the Liberal school. Let us have the Liberal school near to the home, so that the boy may attend it from his home in the latter part of the day. And let us have, as is essential, the Technical school placed according to the requirements of its subjects, viz. near the seat

of the industries, especially as it is likely to make a large use of an apprenticeship system.

With present schools, teachers, and apparatus, we could work out nearly the whole system outlined in the previous part of this chapter better than could be done even in the Utopia we originally postulated. For the separation of the two branches into two separate schools would add to the efficiency of both. In each stage of the scheme all the Technical subjects are taught in a Technical school. And the Liberal subjects are after-subjects taught in a Liberal school. Each is completely separated in organisation. One is in the town and one at the home, just as home and work are always separated in life.

Modification of Both Schools. Only one change is needed. Owing to the separation of Technical and Liberal education each has usurped somewhat of the functions of the other. It is no duty of the Technical schools to give a "General Education." They must confine themselves to

- (1) finding out by an early wide course the interests and powers of the boy,
- (2) training him by a later special education for a special branch of work in which there is a demand for his services.

This shortens the present Technical courses. In any case, how can we ever admit an educational system which gives a boy no leisure, and no opportunity for learning how to use it.

The Liberal school has nothing to do with the profession of the boy. Its sole duty is to give him a little instruction in his civic duties, and to give him every opportunity for using his leisure in any profitable way that he chooses, so long as it is one that will be possible in after life.

The Possibility of this. We have Technical schools and Liberal schools. And the system of education is still unsatisfactory. It is simply a matter of co-ordinating them to attain the ideal.

CHAPTER XXII.

THE ALTERNATIVE.

IN the preceding chapter we have outlined one view of the solution of the educational problem of the present. It was the optimistic view.

In this last chapter another view will be considered—the pessimistic.

It has been assumed in the last chapter that it is possible to educate a boy for his profession, and that the chief reason why this has not been done is that the school has been unable to solve the problem of deciding for what profession to educate each boy. On that assumption a proposal has been outlined.

The Second View. But it may be urged that it is not possible, even knowing the capabilities and the future profession of the child, to educate for that profession. This impossibility may be due to two causes :

1. The Profession is too complex to be learned by any but a grown man.

2. The school is not capable of teaching the profession.

(1) *The boy cannot learn.* With regard to the first of these causes. If the profession is too complex to be taught at school, the obvious duty of the school is to prepare the boy as best it may to learn the profession at a later date. Learning something totally different will certainly not be a good preparation for this. The best preparation that can be given is that

the school should teach the profession as best it can. Undoubtedly engineering or finance can only be taught to fully developed minds. Supposing that both from the boy's abilities and from his opportunities we are convinced that he will be an engineer at a later date, we shall prepare him better for this work by teaching him even the simplest rudiments of mechanics, of design, and of construction, by letting him practise with even the most inferior materials, than by giving him a general education which has no relation whatever to the work. Moreover, if we do not make the above assumption, if we have to find out whether the boy has the abilities, clearly the nearer our course is to the actuality, the more likely are we to make the discovery. Certainly we cannot discover the presence or absence of special abilities by a general course.

(2) *The school cannot teach.* The second is a more valid argument.

We should not say that the school cannot teach the subject at all, but rather that it cannot teach the boy as well as he could be taught elsewhere.

For example, in the country in which I write, the natural tendency is to rush towards the founding of a technical or industrial school, to say, "Let us teach the children agriculture, weaving, pottery, oil-making, etc." But it is held by some persons that no school could teach the children better than they are taught already. The methods are primitive: the ploughs are light, and the ploughing is shallow; the looms are primitive. But the light ploughs suit the small cattle, and the small cattle suit the climate and the circumstances of the cultivator. Even supposing that by improved methods a greater yield could be obtained, this greater yield would require more work from the cultivator. And perhaps the cultivator does not desire to give more work. He does not desire to become rich. His standard of comfort is low, and amongst his comforts he may possibly number a certain amount of ease.

In fact, it has been said that the methods employed may not be so productive as other methods, but they are better suited to the circumstances. The father teaches those methods to the son. And in weaving, the mother teaches the daughter. Possibly no school could teach them so well, certainly not better. Is there any purpose in teaching at all?

The same argument applies in England in a modified form. In the little Gloucestershire manufacturing village the fate of the child is pretty well known beforehand. He will go to the mill, perhaps the pin mill, or the shoddy mill, or the cloth mill. He will perform one simple act of skill, or manage one machine. That work can be taught nowhere better than in the manufactory itself. For the machine could not be purchased by the school; nor, probably, could the task be taught beforehand, for processes change very rapidly. Moreover, the total manufacture is divided into tens or even hundreds of separate simple processes.

There are as many processes as parents. And the parents could best teach the children their own little tasks, or else there is no need of teaching. The parents or the factory will do it. Why then teach in the school?

The case is a little different here. We may suppose that the boy wants to "get on."

In that case we are driven back on the previous argument. The different factories are not so numerous. It would not be impossible to send each boy down to his work knowing a good deal about the whole process in which he is doing a part, capable of initiative, and having the knowledge to make it. If he had to his particular act of skill a background of general knowledge of the whole process, he would be less dependent on a single act for his employment. Hence he would be more mobile as a worker. The practice that a school would give using only a primitive loom, or home-made washing, dyeing, and spinning apparatus could produce such an "idea of the thing" as would

be extremely valuable to the manufacturer and the boy.

But if we take it that the boy cannot or does not want to "get on," if we take the view, which is in too many cases a true one, that all his life he will be the drudge, willing or unwilling, to a single process, and that that process cannot be taught at the school, what of the education then ?

The Alternative. If the school cannot prepare the boy for his work, then the school has one of its functions removed and the other two remain. It may teach the boy to employ his leisure time that he may be a happier and more intelligent being in spite of his daily task. And it may teach him a little of citizenship so that he may perform his social duties. It will not thrust into him literature, art, athletics, and all the rest. It will simply give him opportunity for following whatever valuable leisure employment gives him most satisfaction. For a man can have but one or two hobbies. And to thrust a leisure employment, whose sole object is pleasure, on anyone who finds no pleasure in it and will never follow it willingly, is sheer waste of time ; moreover, the occupation ceases to be leisure if it is performed all day long. Such a school is little different from a boy's club. It offers a range of optional subjects, and it meets after or before the day's work, and it does not teach boys, but merely helps them to occupy themselves well.

This is very different from the ordinary primary school, different in method, and different in curriculum, and different in cost.

For the Primary school includes many subjects which are not leisure subjects, and it does not teach subjects as if they were leisure subjects. One cannot tell really what its purpose is.

Final. Indeed it amounts to this. Let us make up our minds either that we can prepare boys for the life-work as well as for the life's leisure and the life's duties. If so, it is a happy thing for the country.

For if we can achieve such an efficiency it will be a new beginning of prosperity.

Or if we cannot do this : let us make up our minds to it, and put an end to all this waste of time and money which achieves no purpose. The time of the Elementary school can be shortened by half, and we can apply ourselves, in the half that remains, to achieving a little more happiness after the untrained drudgery of the day.

THE END.





